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ABSTRACT

The known North American *Herpyllus* (25 species) and *Scotophaeus* (one species) are diagnosed, described, and assigned to species groups. The synonymy of the predominantly European genus *Scotophaeus* with *Herpyllus* is disclaimed; the Mexican genus *Bonna* O. P.-Cambridge is newly synonymized with *Herpyllus*. A single European species of *Scotophaeus*, *S. blackwalli* (Thorell), is represented in the New World by three isolated and apparently introduced synanthropic populations. Eight new species of *Herpyllus* (*sherus*, *frio*, *igualala*, *gertschi*, *perote*, *malikini*, *brachet*, and *giganteus*) are described from the southwestern United States and Mexico. Six specific names are newly synonymized: *H. cratus*

Chamberlin with *H. ecclesiasticus* Hentz; *H. piedicus* Chamberlin and Woodbury with *H. propinquus* (Keyserling); *H. cepeus* Chamberlin with *H. cockerelli* (Banks); and *H. bryophilus* Chamberlin, *H. itamus* Chamberlin, and *H. faxoni* Bryant, all with *H. emertoni* Bryant. The female of *H. bensonae* Fox and the males of *H. excelsus* Fox, *H. reservatus* Chamberlin, *H. pictus* (F. O. P.-Cambridge), *H. schwarzi* (Banks), *H. bubulcus* Chamberlin, and *H. regnans* Chamberlin are described for the first time. *Herpyllus atopophysis* Chamberlin and *H. floridanus* (Banks) are transferred to *Nodocion*; *H. irvingi* Mello-Leitão and *H. josephus* (Chamberlin and Gertsch) are transferred to *Cesonia*.

INTRODUCTION

The present paper, the ninth in a series on the spider family Gnaphosidae, is concerned with the North American genus *Herpyllus* and with *Scotophaeus*, a genus frequently confused with *Herpyllus* in the past. Some *Herpyllus* are among the most common North American gnaphosids; several species occur in houses and at least one, *Herpyllus ecclesiasticus* Hentz (the "parson spider," so named because of its striking black and white markings; figs. 1, 2), is known to bite and be mildly venomous to man (Oehler, 1974; Majeski and Durst, 1975).

Herpyllus is one of a complex of several closely related North American genera for which a variety of names (such as *Nodocion*, *Liodrasus*, *Litopyllus*, *Cesonia*, *Sergiolus*, and *Poecilochroa*) have been proposed. All these spiders have similar and rather simple genitalia, and it was at first thought by us that only one or a few of these names could refer to distinct groups. Further study has shown, however, that when a relatively small number of species that have been erroneously assigned in the past are transferred to other genera, most of these genera have defining synapomorphies and can therefore be considered monophyletic. Males of *Herpyllus*, for example, have characteristically broadened embolar bases (figs. 3, 130) not found in the other genera.

Chamberlin (1922) asserted that the American species of *Herpyllus* "conform fully to" the

well-known European genus *Scotophaeus* Simon, and synonymized *Scotophaeus* with *Herpyllus*. Most but not all subsequent European workers have ignored this synonymy. Through the courtesy of Drs. Å. Holm of Uppsala Universitet and T. Kronstedt of the Naturhistoriska Riksmuseet, Stockholm, we have been able to examine specimens of the type species of *Scotophaeus*, *S. quadripunctatus* (Linnaeus). Males (figs. 119, 120) lack the broadened embolar base and elongate (rather than hooklike) median apophysis typical of *Herpyllus*, females (figs. 121, 122) have much more complex spermathecae bearing terminal bulbs, and there appears to be no justification for regarding the two genera as synonymous.

Confusion between the two genera was furthered when Gertsch (in Locket and Millidge, 1953) correctly indicated the synonymy of *Herpyllus pius* Chamberlin, described from California, with the European species *Scotophaeus blackwalli* (Thorell). The genitalia of this species (figs. 123-129) conform to those of *Scotophaeus* rather than those of *Herpyllus* in the characters listed above. *Scotophaeus blackwalli* has been collected in three areas in the New World: along the Pacific coast of North America and the Gulf coast of the United States (map 9), and in the vicinity of Lima, Peru. At least along the Pacific coast it is frequently synanthropic, and each of

the three populations has probably been independently introduced from Europe. No specimens of the Gulf coast population have been taken since 1945 and it is possible that the species has not survived there.

So far as is known, *Herpyllus* is restricted to North America (including Guadalupe and other islands off the coast of Baja California); specimens are known from only as far south as southern Mexico. Three South American species have been placed in the genus but appear to be misplaced. Simon (1893a) described *Herpyllus suavis* from Venezuela, but the coloration and eye pattern exclude the species from *Herpyllus*. Simon (1893b) transferred *Drassus longipes* Nicolet (1849) to *Herpyllus* without having seen specimens; the species is unidentifiable at present. Mello-Leitão (1940) transferred *Drassus australis* Holmberg (1881) to *Herpyllus*, but his illustration of the male palp shows a long, coiled embolus unlike that of *Herpyllus*.

The known species of *Herpyllus* seem to fall into five species groups based on the structure of the retrolateral tibial apophysis of the male palp. In the *ecclesiasticus* group (*ecclesiasticus*, *propinquus*, *excelsus*, *sherus*, and *frio*) the apophysis is long and invaginated at its tip (figs. 4, 7); the apophysis is also long but is curved, not invaginated, at the tip (figs. 32, 35) in the *cockerelli* group (*cockerelli*, *scholasticus*, *reservatus*, and *pictus*); the *emertoni* group (containing only *emertoni* and *iguala*) is characterized by a short laterally directed and dorsoventrally compressed tibial apophysis (figs. 52, 55); in the *hesperolus* group (*hesperolus*, *bensonae* and *convallis*) the tibial apophysis is short and spikelike (figs. 64, 67; and short and hooked (figs. 80, 83) in the *schwarzi* group (*schwarzi*, *bubulcus*, *regnans*, *perditus*, *coahuilanus*, *gertschi*, and *perote*). Four Mexican species (*malkini*, *brachet*, *fidelis*, and *giganteus*) are known only from females and are therefore not assigned to groups, but their possible relationships are discussed below.

The name of one of the most common species of *Herpyllus* unfortunately has been unstable in the past. About half of the literature references to *H. ecclesiasticus* Hentz (1832) incorrectly use the name *H. vasifer* (Walckenaer). The latter name was first used by Walckenaer (1805) but was then accompanied not by a description but only by a reference to an unpublished illustration

by Bosc, making the 1805 usage a *nomen nudum*; *vasifer* did not become a valid name until Walckenaer (1837) provided an actual description, and by then the name was a junior synonym of *ecclesiasticus*.

The format of the descriptions and the standard abbreviations of morphological terms follow those used by Platnick and Shadab (1975). Locality records are provided for each species but for abundant species only county records within the United States are cited. Scanning electron micrographs, obtained with the assistance of Mr. Robert J. Koestler, have been supplied where sufficient material was available. The 2500 adult specimens used were from the large holdings of the American Museum of Natural History (AMNH), including material supplied by Dr. W. J. Gertsch, and from the following curators and collectors, to each of whom we are indebted: D. E. Bixler; J. E. Carico; R. E. Crabill, Jr., National Museum of Natural History, Smithsonian Institution (USNM); C. D. Donale, Canadian National Collection; H. S. Dybas, Field Museum of Natural History; R. L. Fischer, Michigan State University; S. Frommer, University of California, Riverside; W. D. Fronk; T. D. Gowan; N. Horner; W. Icenogle; B. J. Kaston; R. E. Leech; H. W. Levi, Museum of Comparative Zoology, Harvard University (MCZ); W. B. Peck, Exline-Peck Collection; R. X. Schick, formerly of the California Academy of Sciences (CAS); E. I. Schlinger and C. Griswold, University of California, Berkeley; W. Sedgwick; W. A. Shear; B. R. Vogel; H. K. Wallace; F. R. Wanless, British Museum (Natural History) (BMNH); and H. V. Weems, Jr., Florida State Collection of Arthropods.

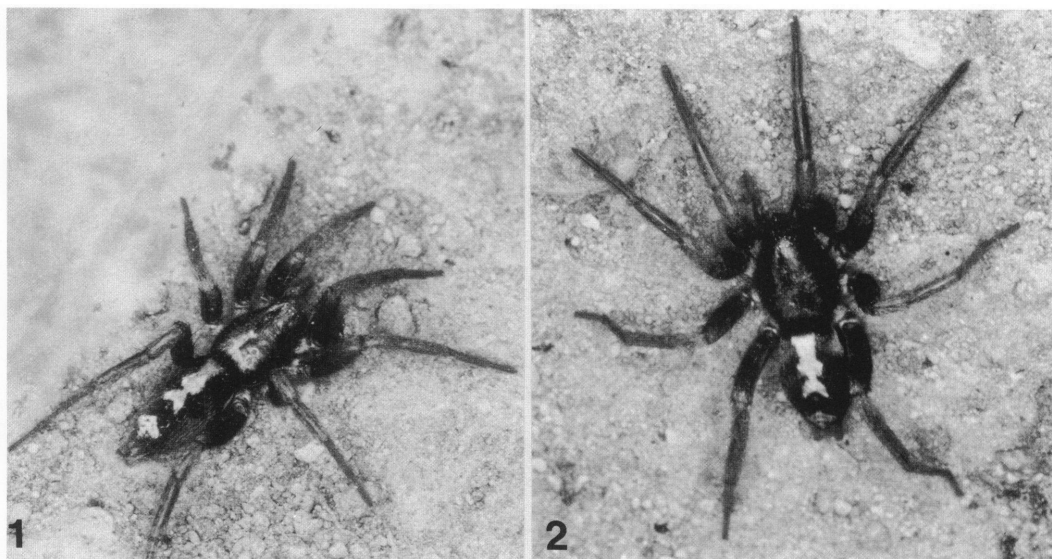
All measurements cited below are in millimeters.

HERPYLLUS HENTZ

Herpyllus Hentz, 1832, p. 102 (type species, designated by Simon, 1893b, *Herpyllus ecclesiasticus* Hentz). Roewer, 1954, p. 421. Bonnet, 1957, p. 2170.

Bonna O. P.-Cambridge, 1898, p. 249 (type species by monotypy *Bonna fidelis* O. P.-Cambridge). Roewer, 1954, p. 410. Bonnet, 1955, p. 902. NEW SYNONYMY.

Diagnosis. *Herpyllus* may be recognized most easily by genitalic characters: the male embolus



FIGS. 1, 2. *Herpyllus ecclesiasticus* Hentz, female from Massachusetts. Photographs by H. W. Levi.

is basally broadened and the median apophysis is elongate (fig. 3); the internal female genitalia consist of two elongate tubular spermathecae with basal lobes (fig. 6). Specimens may be distinguished from *Nodocion* by the presence of a retromarginal cheliceral denticle, from *Cesonia* and *Litopyllus* by the subequal spacing of the posterior eyes, and from *Poecilochroa* by the much larger eyes.

Description. Total length 4.2-17.3. Carapace an elongate oval, widest between coxae II and III, gradually narrowed anteriorly, light to dark brown, lightest medially, with short recumbent dark setae. Cephalic area slightly raised medially; thoracic groove longitudinal. From above, anterior eye row slightly recurved, posterior row straight; from front, anterior row recurved, posterior row slightly recurved. AME circular, PME irregularly oval, lateral eyes oval. Eyes subequal in size, relatively large. AME separated by roughly their diameter, by roughly their radius from ALE; posterior and lateral eyes separated by roughly their diameter. MOQ longer than wide, wider in back than in front. Clypeal height roughly equal to AME diameter. Chelicerae with three promarginal teeth and a retromarginal denticle. Endites short, sinuous, with deep oblique depressions and anteromedian serrulae, light brown with white anteromedian corners; labium

longer than wide, broadly rounded distally, dark brown; sternum long, brownish orange, strongly rebordered, with long marginal setae. Leg formula 4123. Typical leg spination pattern (only surfaces bearing spines listed): femora: I, II d1-1-1, p0-1-1; III d1-1-1, p0-1-1, r0-1-1; IV d1-1-1, p0-1-1, r0-0-1; patellae III, IV r0-1-0; tibiae: I v1p-1p-1p; II v0-1p-1p; III d1-0-0, p2-1-1, v2-2-2, r0-1-1; IV d1-0-0, p1-1-1, v2-2-2, r1-1-1; metatarsi: I, II v2-0-0; III p1-2-2, v2-0-2, r1-1-2; IV p1-2-2, v2-2-2, r1-2-2. Legs light brown, lightest distally. Anterior metatarsi and all tarsi scopulate; tarsi with two dentate claws and claw tufts. Trochanters shallowly notched. Metatarsal preening comb absent. Leg segments with dorsal trichobothria. Abdomen brown to dark gray, sometimes with pattern (figs. 1, 2); males with brownish orange anterior scutum on dorsum. Six spinnerets, anteriors heavily sclerotized, separated by their diameter, bearing up to eight spigots. Palp with broadened embolar base and elongate median apophysis. Retrolateral tibial apophysis variable. Epigynum with pair of lateral margins. Spermathecae elongate, sausage-shaped.

Synonymy. O. P.-Cambridge provided no characters to separate *Bonna* from *Herpyllus* and there appear to be none.

Misplaced Species. *Herpyllus atopophysis*

Chamberlin and *H. floridanus* (Banks) lack a retromarginal cheliceral denticle, have a promarginal cheliceral carina, and are therefore transferred to *Nodocion*. *Herpyllus irvingi* Mello-Leitão and *H. josephus* (Chamberlin and Gertsch) have eye patterns and epigyna characteristic of *Cesonia* and are therefore transferred to that genus. Comments on South American species can be found above.

Uncertain Name. The type of *Herpyllus vespa* Hentz is destroyed, the species cannot be recognized from Hentz's description, and the name is considered a *nomen dubium*.

KEY TO SPECIES OF *HERPYLLUS*

1. Males 2
Females 22
2. Retrolateral tibial apophysis (RTA) relatively long, narrow (as in figs. 3, 15, 31) 3
Retrolateral tibial apophysis (RTA) relatively short, wide (as in figs. 51, 63, 79) 11
3. RTA invaginated at tip (figs. 4, 12, 15, 23, 27) 4
RTA curved at tip (figs. 31, 39, 43, 47) 8
4. RTA sinuous (figs. 4, 7, 9, 12) 5
RTA straight (figs. 16, 19, 24, 28) 6
5. Prolateral loop of palpal duct straight (fig. 3); east of Rocky Mountains (map 1) *ecclesiasticus*
Prolateral loop of palpal duct produced laterally at base (fig. 11); west of Rocky Mountains (map 1) *propinquus*
6. Invagination of RTA directed distally (fig. 27) *frio*
Invagination of RTA directed laterally (figs. 15, 23) 7
7. RTA relatively long (figs. 15, 16); United States and Sonora (map 2) *excelsus*
RTA relatively short (figs. 23, 24); southern Mexico (map 2) *sherus*
8. Tip of RTA recurved (figs. 32, 35, 37, 40) 9
Tip of RTA not recurved (figs. 21, 44, 48) 10
9. RTA relatively narrow (figs. 37, 39); California (map 3) *scholasticus*
RTA relatively wide (figs. 31, 35); east of California (map 3) *cockerelli*
10. RTA relatively short (fig. 43); United States and Sonora (map 4) *reservatus*
RTA relatively long (fig. 47); southern Mexico (map 4) *pictus*
11. RTA dorsoventrally flattened (figs. 51, 55, 59) 12
RTA not dorsoventrally flattened (as in figs. 63, 79) 13
12. RTA relatively long (figs. 51, 55); southeastern United States (map 5) *emertoni*
RTA relatively short (fig. 59); Mexico (map 5) *iguala*
13. RTA a short spike (figs. 63, 71, 75) 14
RTA a hook (as in fig. 80) 16
14. RTA bifid (fig. 63) *hesperolus*
RTA not bifid (figs. 71, 75) 15
15. Tip of embolus originating from middle of squared embolar base (fig. 75) *convallis*
Tip of embolus originating from side of triangular embolar base (fig. 71) *bensonae*
16. RTA with large prolateral tubercle (figs. 79, 87, 95, 99, 103, 107) 17
RTA without large prolateral tubercle (figs. 91, 92) *regnans*
17. Prolateral tubercle of RTA a distinct lobe (figs. 95, 99, 103, 107) 19
Prolateral tubercle of RTA not a distinct lobe (figs. 79, 87) 18
18. Dorsal prong of RTA relatively wide, close to tubercle (figs. 80, 83); west of southwestern New Mexico (map 7) *schwarzi*
Dorsal prong of RTA relatively narrow, far from tubercle (figs. 85, 88); east of southwestern New Mexico (map 7) *bubulcus*
19. Dorsal prong of RTA relatively long (figs. 95, 96) *perditus*
Dorsal prong of RTA relatively short (figs. 100, 104, 108) 20
20. RTA widest distally (figs. 100, 104) 21
RTA widest proximally (figs. 107, 108) *perote*
21. Prolateral tubercle of RTA situated proximally (fig. 99) *coahuilanus*
Prolateral tubercle of RTA situated distally (figs. 57, 103) *gertschi*
22. Epigynum with separated pair of dark basal ducts (figs. 5, 13) 23
Epigynum without separated pair of dark basal ducts 24
23. Basal epigynal ducts directed anteriorly (fig. 5); epigynum relatively narrow (fig. 8); east of Rocky Mountains (map 1) *ecclesiasticus*
Basal epigynal ducts directed laterally (fig. 13); epigynum relatively wide (fig. 10); west of Rocky Mountains (map 1) *propinquus*
24. Lateral epigynal margins straight (figs. 17, 20, 25, 29) 25
Lateral epigynal margins not straight 27

25. Lateral epigynal margins directed anteriorly (figs. 17, 20, 25) 26
Lateral epigynal margins directed laterally (fig. 29) *frio*
26. Lateral epigynal margins connected anteriorly (figs. 17, 20); United States and Sonora (map 2) *excelsus*
Lateral epigynal margins not connected anteriorly (fig. 25); southern Mexico (map 2) *sherus*
27. Epigynum wider anteriorly than posteriorly (figs. 45, 53, 61, 65, 73, 77, 105, 109, 111, 113, 117) 28
Epigynum wider posteriorly than anteriorly (figs. 33, 41, 49, 81, 89, 93, 97, 101, 115) 38
28. Lateral epigynal margins approximate (figs. 53, 61) 29
Lateral epigynal margins widely separated 30
29. Spermathecae rectangular, relatively narrowly separated (fig. 54); southeastern United States (map 5) *emertoni*
Spermathecae ovoid, relatively widely separated (fig. 62); Mexico (map 5) . . . *iguala*
30. Lateral epigynal margins connected anteriorly (figs. 22, 45) *reservatus*
Lateral epigynal margins not connected anteriorly 31
31. Epigynal atrium far anterior of epigastric furrow (figs. 70, 77) *convallis*
Epigynal atrium near epigastric furrow . . 32
32. Lateral epigynal margins with terminal hooks (figs. 58, 105) *gertschi*
Lateral epigynal margins without terminal hooks 33
33. Epigynal atrium heart-shaped (figs. 65, 68, 73) 34
Epigynal atrium not heart-shaped 35
34. Lateral epigynal margins relatively long (figs. 65, 68); United States and northern Baja California (map 6) *hesperolus*
Lateral epigynal margins relatively short (fig. 73); central Baja California (map 6) *bensonae*
35. Epigynum Y- or U-shaped (figs. 109, 117) 36
Epigynum not Y- or U-shaped 37
36. Epigynum Y-shaped (fig. 109); southern Mexico (map 8) *perote*
Epigynum U-shaped (fig. 117); Guadalupe Island (map 6) *giganteus*
37. Epigynum with hood (fig. 111); western Mexico (map 6) *malkini*
Epigynum without hood (fig. 113); central Mexico (map 6) *brachet*
38. Epigynum diamond-shaped (figs. 33, 36, 38, 41) 39
Epigynum not diamond-shaped 40
39. Epigynum relatively wide anteriorly (figs. 33, 36); east of California (map 3) *cockerelli*
Epigynum relatively narrow anteriorly (figs. 38, 41); California (map 3) . . *scholasticus*
40. Lateral epigynal margins not connected anteriorly (figs. 49, 81, 84, 115) 41
Lateral epigynal margins connected anteriorly 43
41. Lateral epigynal margins relatively short, hood present (fig. 49) *pictus*
Lateral epigynal margins relatively long, hood absent (figs. 81, 84, 115) 42
42. Epigynal atrium widest anteriorly (figs. 81, 84); United States (map 7) . . *schwarzi*
Epigynal atrium widest at middle (fig. 115); southern Mexico (map 6) . . *fidelis*
43. Epigynum with median arch (figs. 86, 89, 93) 44
Epigynum without median arch (figs. 97, 101) 45
44. Epigynum wider than long (figs. 86, 89); Colorado, New Mexico, and Texas (map 7) *bubulcus*
Epigynum longer than wide (fig. 93); Texas (map 4) *regnans*
45. Epigynum triangular (fig. 97); western Mexico (map 7) *perditus*
Epigynum rounded (fig. 101); Coahuila (map 7) *coahuilanus*

Herpyllus ecclesiasticus Hentz

Figures 1-8; Map 1

Drassus vasifer (*nomen nudum*): Walckenaer, 1805, p. 46.

Herpyllus ecclesiasticus Hentz, 1832, p. 102 (holotype from the United States, destroyed). Bonnet, 1957, p. 2171.

Drassus vasifer Walckenaer, 1837, p. 620 (holotype from Carolina, lost).

Prosthesima bimaculata Keyserling, 1887, p. 433, pl. 6, fig. 9 (male holotype from Cambridge, Middlesex County, Massachusetts, in MCZ, examined).

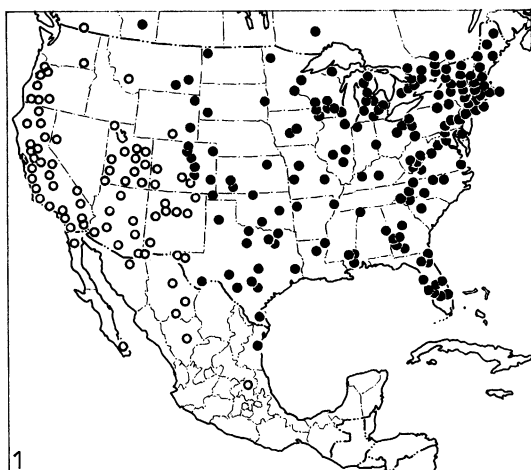
Prosthesima ecclesiasticus: Marx, 1890, p. 507.

Herpyllus vasifer: Simon, 1893b, p. 373. Roe-
wer, 1954, p. 423.

Melanophora bimaculata: Bryant, 1908, p. 7.

Zelotes bimaculata: Petrunkevitch, 1911, p. 148.

Herpyllus cratus Chamberlin, 1922, p. 150 (female holotype from Punta Gorda, Charlotte



MAP 1. North America, showing distribution of *Herpyllus ecclesiasticus* (closed circles) and *H. propinquus* (open circles).

County, Florida, in MCZ, examined). Roewer, 1954, p. 422. Bonnet, 1957, p. 2171. NEW SYNONYMY.

Zelotes bryantea Roewer, 1951, p. 444 (nomen novum for *Prothesima bimaculata*, preoccupied in *Zelotes*). Roewer, 1954, p. 470.

Diagnosis. *Herpyllus ecclesiasticus* is closest to *H. propinquus*; both species have long, sinuous, distally invaginated retrolateral tibial apophyses and a pair of separated dark basal epigynal ducts, and they replace each other geographically (map 1). Males of *H. ecclesiasticus* may be distinguished by the straight prolateral loop of the palpal duct (fig. 3), females by the anteriorly directed basal epigynal ducts (fig. 5).

Male. Total length 5.36 ± 0.73 . Carapace 2.53 ± 0.33 long, 1.95 ± 0.25 wide. Femur II 1.71 ± 0.25 long (254 specimens examined). Eye sizes and interdistances: AME 0.09, ALE 0.09, PME 0.09, PLE 0.09; AME-AME 0.06, AME-ALE 0.04, PME-PME 0.09, PME-PLE 0.06, AME-ALE 0.08. MOQ length 0.28, front width 0.25, back width 0.27. Prolateral loop of palpal duct without lateral basal projection (fig. 3). Retrolateral tibial apophysis long, invaginated at tip, abruptly narrowed in width at about half its length (figs. 4, 7). Leg spination: femur IV r0-1-1; tibiae: I v0-1p-2; II v1r-1p-2; III v1p-2-2, r1-1-1; metatarsus III p1-1-2.

Female. Total length 7.75 ± 1.19 . Carapace 3.64 ± 0.72 long, 2.75 ± 0.46 wide. Femur II 2.46 ± 0.36 long (330 specimens examined). Eye sizes and interdistances: AME 0.11, ALE 0.13, PME 0.11, PLE 0.11; AME-AME 0.08, AME-ALE 0.04, PME-PME 0.11, PME-PLE 0.10, ALE-PLE 0.12. MOQ length 0.36, front width 0.30, back width 0.33. Epigynum with separated pair of dark, anteriorly directed basal ducts (figs. 5, 7). Spermathecae short, outwardly curved at middle (fig. 6). Leg spination: femur IV r0-1-1; tibiae: I, II v0-0-0; IV v1p-2-2; metatarsi: I v0-0-0; II v1p-0-0.

Records. **Canada:** *Alberta:* Oldman River, Taber. *Manitoba:* Darwin; Glen Lea. *Nova Scotia:* Canard; Greywood; Lequille. *Ontario:* Ancaster; Aylmer; Belleville; Blackstone Lake; Brantford; Chatterton; Elmira; Fitzroy; Gananoque; Innisville; Marmora; Niagara Falls; Orillia; Ottawa; Pointe au Baril; Rondeau Park; Skelton Lake; St. Thomas; Welland; Windsor. *Quebec:* Kingsmere; Lanoraie; Quyon; St. Annes; St. Jean; Venise. **United States** (county records only): *Alabama:* Colbert, Lee. *Arkansas:* Mississippi, Washington. *Colorado:* Boulder, Denver, El Paso, Larimer, Phillips, Prowers, Pueblo. *Connecticut:* Fairfield, Hartford, New Haven, Tolland. *Delaware:* New Castle. *District of Columbia:* Florida: Alachua, Charlotte, Duval, Hendry, Highlands, Indian River, Nassau, Palm Beach, Pinellas, Putnam, Sarasota. *Georgia:* Baker, Chattahoochee, Monroe, Sumter, Thomas. *Illinois:* Cooke, Fayette, Lake, Macoupin, Piatt. *Indiana:* Porter, Wayne. *Iowa:* Audubon, Story. *Kansas:* Gray, Meade, Riley. *Kentucky:* Boyle, Daviess. *Louisiana:* Grant, Madison. *Maine:* Aroostook, Lincoln, Somerset. *Maryland:* Montgomery. *Massachusetts:* Barnstable, Dukes, Essex, Hampshire, Middlesex. *Michigan:* Calhoun, Cheboygan, Clinton, Emmet, Genesee, Hillsdale, Ingham, Iron, Kalamazoo, Livingston, Midland, Oakland, Otsego, Saginaw, Washtenaw, Wexford. *Minnesota:* Hennepin, Marshall, Ramsey. *Mississippi:* Forrest, George, Jackson. *Missouri:* Bates, Johnson, Phelps. *Montana:* Custer, Yellowstone. *New Hampshire:* Carroll, Cheshire, Coos, Grafton, Hillsboro. *New Jersey:* Bergen, Mercer, Union. *New York:* Albany, Clinton, Cortland, Jefferson, Kings, Monroe, Nassau, Oneida, Ontario, Orange, Queens, Rockland, Saint Lawrence, Suffolk,

Tompkins, Ulster, Warren, Westchester. *North Carolina*: Buncombe, Durham, Guilford, Haywood, Macon, Mecklenburg, Wake, Watauga. *North Dakota*: Divide. *Ohio*: Columbiana, Knox, Summit, Trumbull, Wayne. *Oklahoma*: Alfalfa, Carter, Cimarron, Pittsburg. *Pennsylvania*: Adams, Berks, Bradford, Bucks, Potter. *Rhode Island*: Providence. *South Carolina*: Lexington, Oconee. *South Dakota*: Brookings, Custer. *Texas*: Bexar, Brewster, Dallas, Denton, Grayson, Hardin, Hidalgo, Kerr, Llano, Randall, Sutton, Taylor, Travis, Uvalde, Wichita. *Vermont*: Windham, Windsor. *Virginia*: Fairfax, Giles, Highlands, Montgomery, Norfolk, Rockingham. *West Virginia*: Mercer, Ohio, Pocahontas, Raleigh, Summers. *Wisconsin*: Adams, Burnet, Crawford, Dane, Grant, Jefferson, Kenosha, La Crosse, Lafayette, Racine, Vilas, Waushara. *Wyoming*: Crook, Platte. *Mexico*: *Tamaulipas*: Río Soto la Marina.

Distribution. Alberta east to Nova Scotia, south to Tamaulipas and Florida (map 1).

Synonymy. No genitalic differences were de-

tected in the holotype of *cratus* that would serve to separate it from other specimens of *ecclesiasticus*.

Natural History. Mature males and females have been taken year-round; specimens have been collected at elevations up to 8050 feet, in houses, under rocks and logs, in malaise traps, and associated with oak, maple, pine, basswood, cottonwood, sycamore, locust, cypress, Spanish moss, palmetto, and pitcher plants.

Herpyllus propinquus (Keyserling)

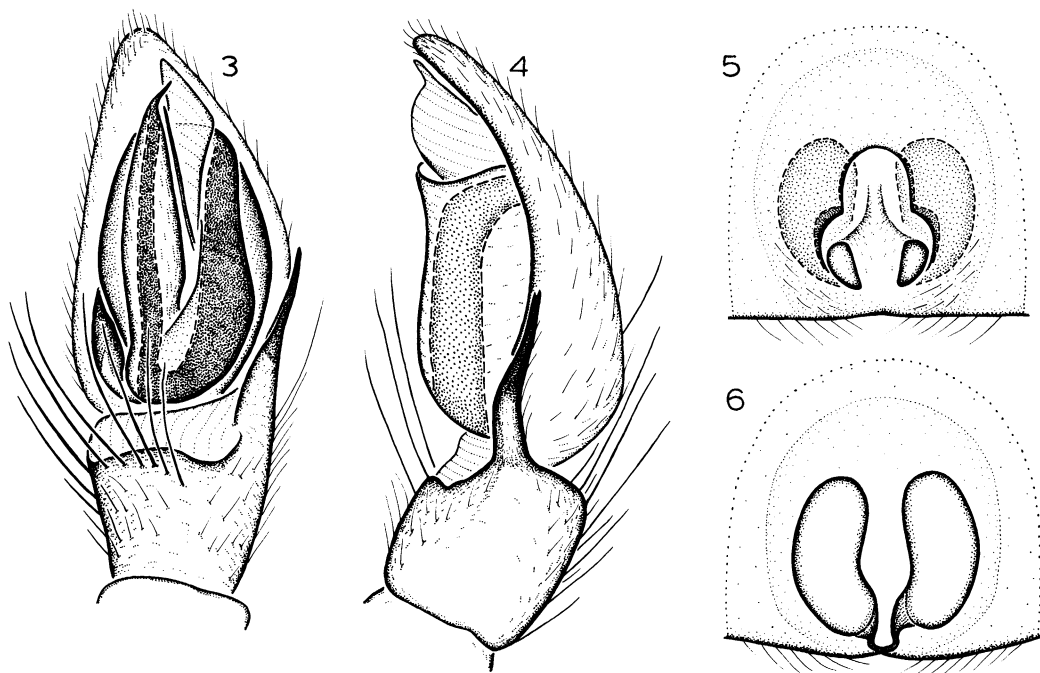
Figures 9-14, 130; Map 1

Prosthesima propinquus Keyserling, 1887, p. 430, pl. 6, fig. 7 (female holotype from Santa Barbara, Santa Barbara County, California, in MCZ, examined).

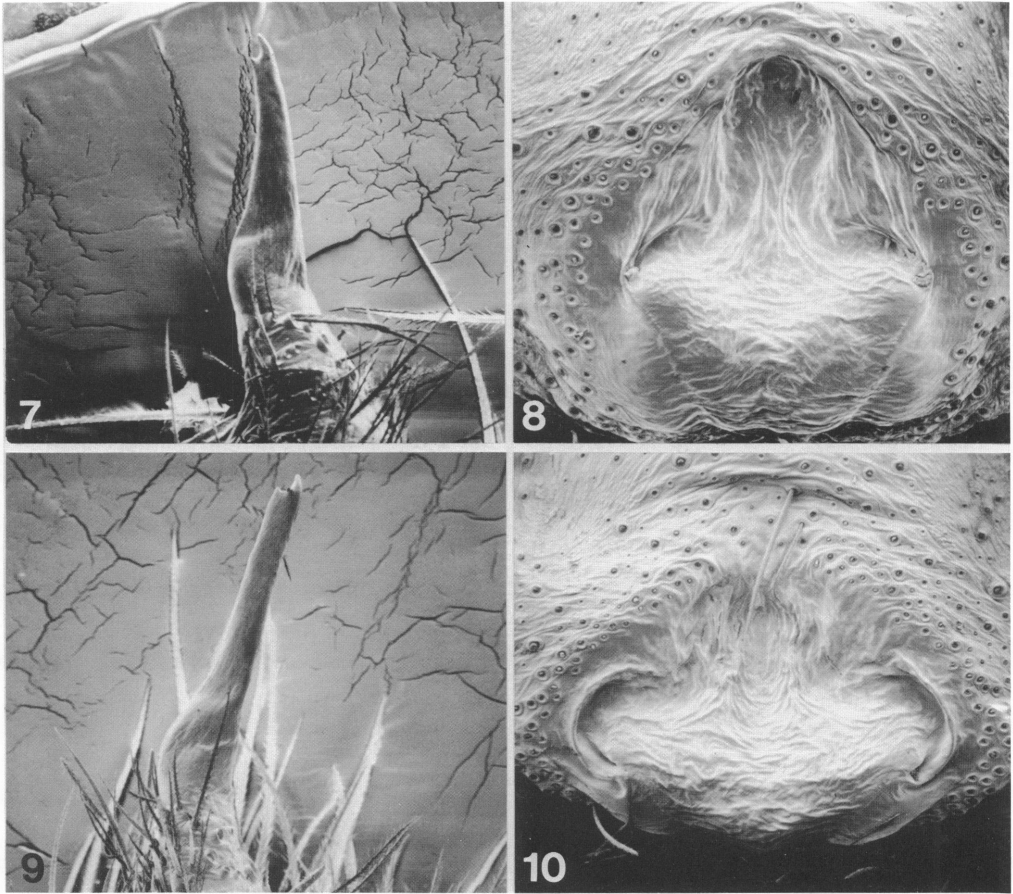
Herpyllus propinquus: Simon, 1893b, p. 373. Roewer, 1954, p. 423. Bonnet, 1957, p. 2173.

Herpyllus californicus Banks, 1904a, p. 110, pl. 5, fig. 11 (female holotype from Lakeside, San Diego County, in MCZ, examined).

Herpyllus piedicus Chamberlin and Woodbury,



FIGS. 3-6. *Herpyllus ecclesiasticus* Hentz. 3. Palp, ventral view. 4. Palp, retrolateral view. 5. Epigynum, ventral view. 6. Vulva, dorsal view.



FIGS. 7-10. Scanning electron micrographs, 190X. 7, 8. *Herpyllus ecclesiasticus* Hentz. 9, 10. *H. propinquus* (Keyserling). 7, 9. Retrolateral tibial apophysis, lateral view. 8, 10. Epigynum, ventral view.

1929, p. 132, pl. 1, figs. 6, 7 (male holotype from St. George, Washington County, Utah, in AMNH, examined). Roewer, 1954, p. 423. Bonnet, 1957, p. 2172. NEW SYNONYMY.

Diagnosis. *Herpyllus propinquus* is closest to *H. ecclesiasticus* but may be distinguished by the laterally produced base of the prolateral loop of the palpal duct (fig. 11) and the laterally directed basal epigynal ducts (fig. 13).

Male. Total length 6.02 ± 0.58 . Carapace 2.91 ± 0.25 long, 2.24 ± 0.21 wide. Femur II 2.10 ± 0.20 long (248 specimens examined). Eye sizes and interdistances: AME 0.09, ALE 0.10, PME 0.11, PLE 0.10; AME-AME 0.09, AME-

ALE 0.03, PME-PME 0.09, PME-PLE 0.07, ALE-PLE 0.12. MOQ length 0.37, front width 0.27, back width 0.31. Prolateral loop of palpal duct with lateral basal projection (fig. 11). Retrolateral tibial apophysis long, invaginated at tip, abruptly narrowed in width at about half its length (figs. 9, 12). Leg spination: femora: I, II r0-1-0, IV r0-1-1; patella III p0-1-0; tibiae: I p1-0-1, v2-2-2; II p0-0-1, v2-2-2.

Female. Total length 8.42 ± 1.21 . Carapace 3.92 ± 0.41 long, 2.97 ± 0.31 wide. Femur II 2.61 ± 0.16 long (278 specimens examined). Eye sizes and interdistances: AME 0.14, ALE 0.14, PME 0.12, PLE 0.14; AME-AME 0.09, AME-

ALE 0.04, PME-PME 0.14, PME-PLE 0.14, ALE-PLE 0.16. MOQ length 0.51, front width 0.37, back width 0.38. Epigynum with separated pair of dark, laterally directed basal ducts (figs. 10, 13). Spermathecae long, outwardly curved at middle (fig. 14). Leg spination: femur IV r0-1-1; tibiae: I v1p-0-1p; III v1p-2-2, r1-1-1; metatarsus I v0-0-0.

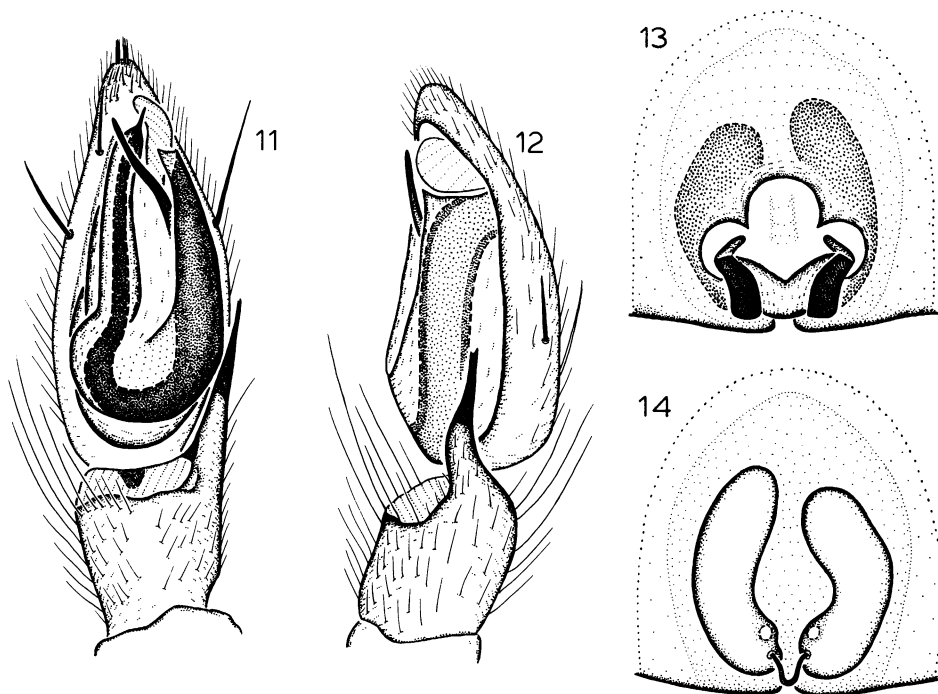
Records. **Canada:** *British Columbia:* Osoyoos. **United States** (county records only): *Arizona:* Cochise, Coconino, Gila, Graham, Maricopa, Pima, Yavapai, Yuma. *California:* Contra Costa, Fresno, Imperial, Inyo, Lake, Los Angeles, Madera, Mariposa, Monterey, Napa, Orange, Riverside, San Bernardino, San Diego, San Joaquin, San Luis Obispo, Santa Barbara, Santa Clara, Shasta, Sierra, Siskiyou, Stanislaus, Trinity, Ventura, Yolo. *Colorado:* Fremont, Mesa, Montezuma, Pueblo. *Montana:* Granite. *Nevada:* Washoe. *New Mexico:* Bernalillo, Colfax, Grant, Hidalgo, Los Alamos, Sandoval, San Miguel,

Santa Fe, Valencia. *Oregon:* Benton, Jackson, Josephine, Klamath, Lane, Marion, Washington. *Texas:* El Paso, Hudspeth. *Utah:* Beaver, Box Elder, Carbon, Duchesne, Grand, Kane, Millard, San Juan, Uintah, Utah, Washington, Wayne. *Washington:* Walla Walla. *Wyoming:* Carbon. **Mexico:** *Baja California Norte:* 14 mi. N Laguna Hanson; Puerto Santo Tomás; Meling Ranch, 5 mi. E San José; 40 mi. S Tecate. *Baja California Sur:* La Paz; Mission San Luis Gonzaga. *Chihuahua:* Delicias; Cañón Prieta, near Primavera; Santa Bárbara; Sierra del Nido. *Durango:* San Juan del Río. *Hidalgo:* Jacala. *Sonora:* 4 mi. S Cananea.

Distribution. British Columbia and Montana south to Baja California Sur and Hidalgo (map 1).

Synonymy. Numerous simultaneous collections of both sexes indicate that *pedicus* is the male of *propinquus*.

Natural History. Mature males and females



FIGS. 11-14. *Herpyllus propinquus* (Keyserling). 11. Palp, ventral view. 12. Palp, retrolateral view. 13. Epigynum, ventral view. 14. Vulva, dorsal view.

have been taken year-round; specimens have been collected at elevations up to 7100 feet, in houses, in pack rat nests, and associated with oak, pinyon pine, juniper, yucca, ephedra, nolina, all-thorn, and mesquite.

Herpyllus excelsus Fox

Figures 15-20; Map 2

Herpyllus excelsus Fox, 1938, p. 232, pl. 2, fig. 8 (female holotype from the Chiricahua Mountains, Cochise County, Arizona, in USNM, examined). Roewer, 1954, p. 423. Bonnet, 1957, p. 2173.

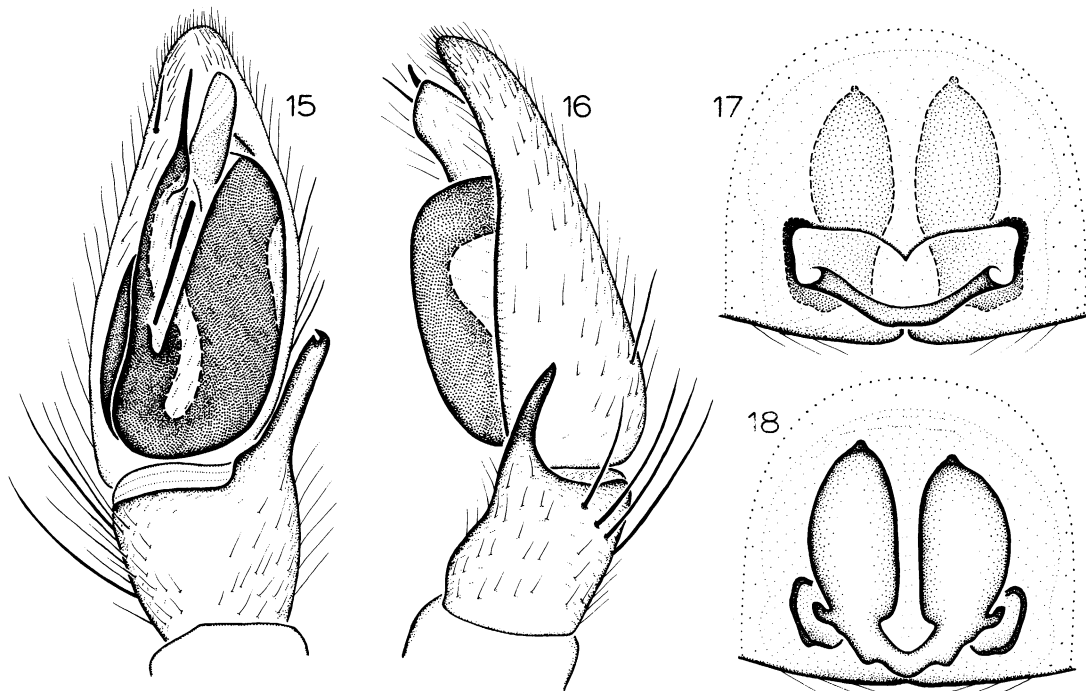
Diagnosis. *Herpyllus excelsus* is closest to *H. sherus*; both species have laterally directed invaginations at the tip of the retrolateral tibial apophysis and straight, anteriorly directed lateral epigynal margins. Males of *H. excelsus* may be distinguished by the relatively long tibial apophysis (figs. 16, 19), females by the anteriorly connected epigynal margins (figs. 17, 20).

Male. Total length 8.05-9.11. Carapace 3.67-4.36 long, 2.77-3.13 wide. Femur II

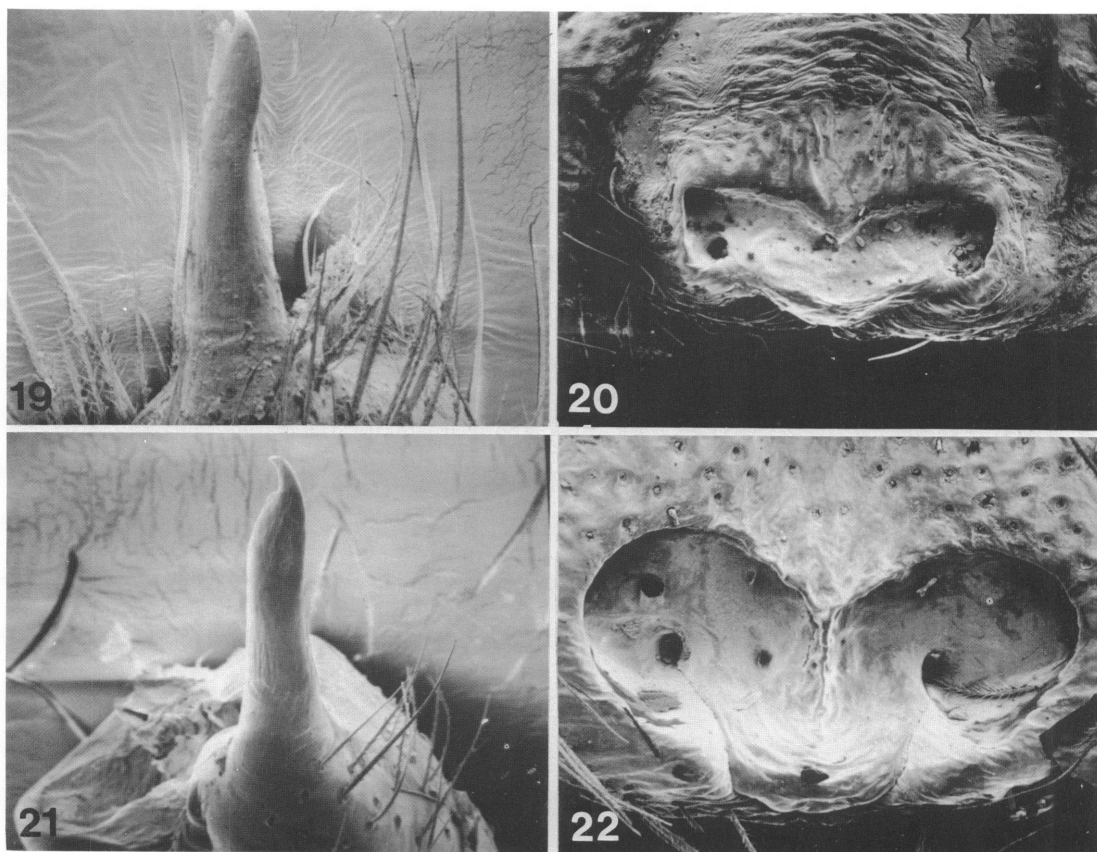
2.84-3.24 long (four specimens). Eye sizes and interdistances: AME 0.17, ALE 0.16, PME 0.15, PLE 0.18; AME-AME 0.14, AME-ALE 0.03, PME-PME 0.16, PME-PLE 0.20, ALE-PLE 0.18. MOQ length 0.57, front width 0.49, back width 0.45. Tip of embolus long, twisted at origin (fig. 15). Retrolateral tibial apophysis relatively long, laterally invaginated at tip (figs. 16, 19). Leg spination: tibiae: I p1-0-0; II p0-0-1, v1p-1p-1p; III v1p-2-2; IV d0-0-0, r0-1-1.

Female. Total length 6.95-9.90. Carapace 3.25-4.43 long, 2.27-3.31 wide. Femur II 2.25-3.13 long (eight specimens). Eye sizes and interdistances: AME 0.13, ALE 0.13, PME 0.14, PLE 0.15; AME-AME 0.14, AME-ALE 0.05, PME-PME 0.13, PME-PLE 0.16, ALE-PLE 0.13. MOQ length 0.51, front width 0.46, back width 0.41. Epigynum with straight, anteriorly directed and connected lateral margins (figs. 17, 20). Spermathecae with distinct tips (fig. 18). Leg spination: tibiae: I v0-1p-1p; III r1-1-1; IV d0-0-0.

Records. United States: Arizona: Cochise Co.: Chiricahua Mountains. Coconino Co.: Flag-



FIGS. 15-18. *Herpyllus excelsus* Fox. 15. Palp, ventral view. 16. Palp, retrolateral view. 17. Epigynum, ventral view. 18. Vulva, dorsal view.



FIGS. 19-22. Scanning electron micrographs, 190X. 19, 20. *Herpyllus excelsus* Fox. 21, 22. *H. reservatus* Chamberlin. 19, 21. Retrolateral tibial apophysis, lateral view. 20, 22. Epigynum, ventral view.

staff; Sitgreaves National Forest. Navajo Co.: Show Low. Pima Co.: Mt. Lemmon, Santa Catalina Mountains; Tucson. Santa Cruz Co.: Madera Canyon, Santa Rita Mountains. Yavapai Co.: 5 mi. S Prescott. *Nevada*: Clark Co.: Las Vegas. *New Mexico*: Valencia Co.: 14 mi. NE Grants. *Mexico*: Sonora: Desemboque.

Distribution. Nevada, Arizona, New Mexico, and Sonora (map 2).

Natural History. Mature males have been taken in August and September, mature females from April through July; specimens have been collected at elevations up to 7000 feet and in a ponderosa pine forest.

***Herpyllus sherus*, new species**

Figures 23-26; Map 2

Types. Male holotype from 14 miles east of

Mazamitla, Jalisco, Mexico (July 28, 1954; W. J. Gertsch) and female paratype from Mexico City, Distrito Federal, Mexico (March, 1941; H. Wagner), deposited in AMNH.

Etymology. The specific name is an arbitrary combination of letters.

Diagnosis. *Herpyllus sherus* is closest to *H. excelsus* but may be distinguished by the shorter retrolateral tibial apophysis (fig. 24) and anteriorly unconnected epigynal margins (fig. 25).

Male. Total length 7.60. Carapace 3.78 long, 2.66 wide. Femur II 3.02 long (holotype). Eye sizes and interdistances: AME 0.15, ALE 0.15, PME 0.17, PLE 0.16; AME-AME 0.14, AME-ALE 0.06, PME-PME 0.14, PME-PLE 0.21, ALE-PLE 0.18. MOQ length 0.61, front width 0.44, back width 0.47. Embolus twisted at origin (fig. 23). Retrolateral tibial apophysis relatively

short, laterally invaginated at tip (fig. 24). Leg spination: tibiae: I v0-0-1p; IV d0-0-0; metatarsi I, II v1p-0-0.

Female. Total length 6.84-9.11. Carapace 2.81-4.14 long, 2.05-3.10 wide. Femur II 2.02-2.77 long (four specimens). Eye sizes and interdistances: AME 0.12, ALE 0.11, PME 0.13, PLE 0.13; AME-AME 0.17, AME-ALE 0.05, PME-PME 0.15, PME-PLE 0.16, ALE-PLE 0.17. MOQ length 0.52, front width 0.42, back width 0.41. Epigynum with straight, anteriorly directed and unconnected epigynal margins (fig. 25). Spermathecae narrowed distally (fig. 26). Leg spination: tibiae: I v0-0-1p; IV d0-0-0, p1-0-1; metatarsi I, II v1p-0-0.

Records. **Mexico:** *Distrito Federal:* Mexico City. *Jalisco:* 14 mi. E Mazamitla. *Oaxaca:* Oaxaca.

Distribution. Southwestern Mexico (map 2).

Natural History. Mature males have been taken in July, mature females in March and April.

Herpyllus frio, new species

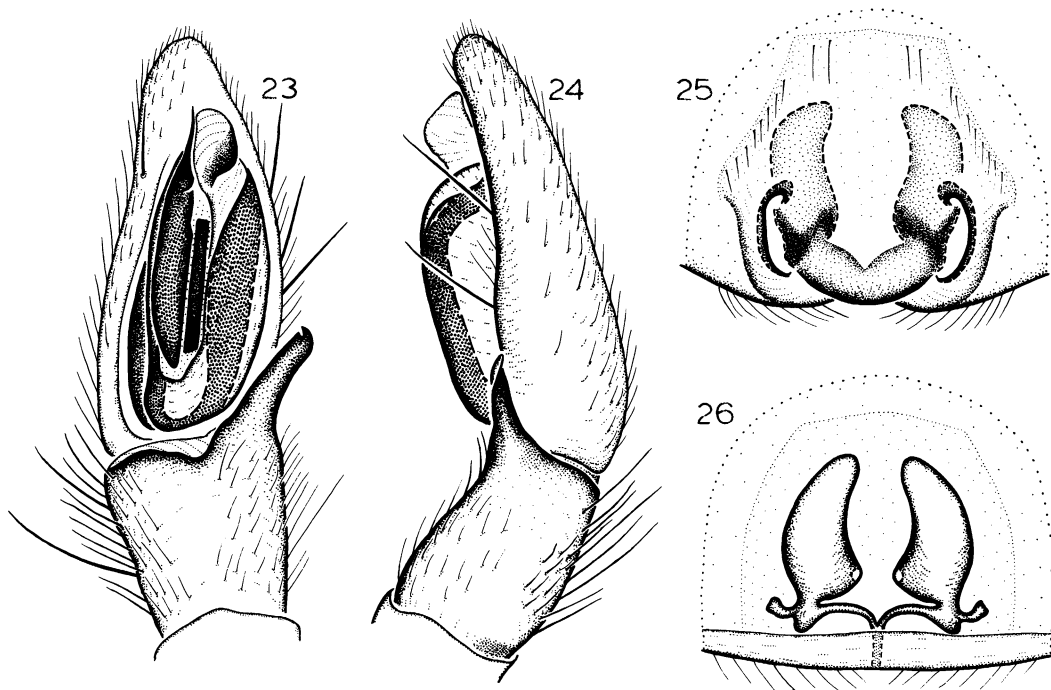
Figures 27-30; Map 2

Types. Female holotype from an elevation of 9850 feet at Río Frío, Puebla, Mexico (April 26, 1942; M. C. Bolivar, B. Osorio, and D. Pelaez), deposited in AMNH, and male paratype from Morelos (no specific locality), Mexico (no date; N. Banks collection), deposited in MCZ.

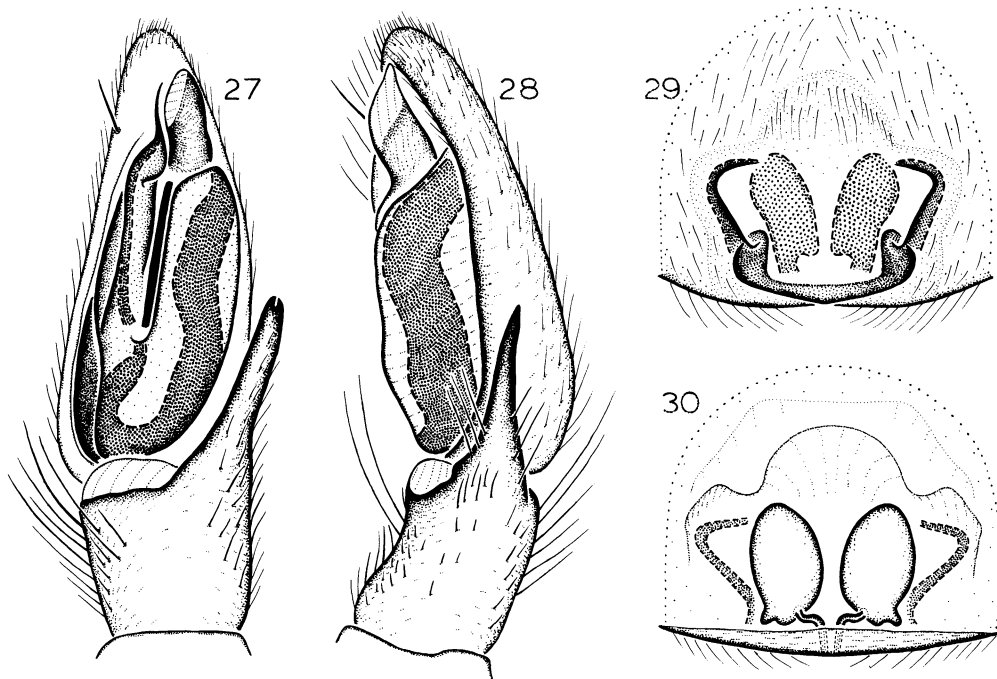
Etymology. The specific name is a noun in apposition taken from the type locality.

Diagnosis. *Herpyllus frio* seems closest to *H. sherus* and *H. excelsus* but may be distinguished by the distally directed invagination at the tip of the retrolateral tibial apophysis (fig. 27) and the laterally directed epigynal margins (fig. 29).

Male. Total length 8.05. Carapace 3.85 long, 2.70 wide. Femur II 2.92 long (holotype). Eye sizes and interdistances: AME 0.17, ALE 0.13, PME 0.15, PLE 0.14; AME-AME 0.19, AME-ALE 0.07, PME-PME 0.17, PME-PLE 0.18, ALE-PLE 0.17. MOQ length 0.58, front width

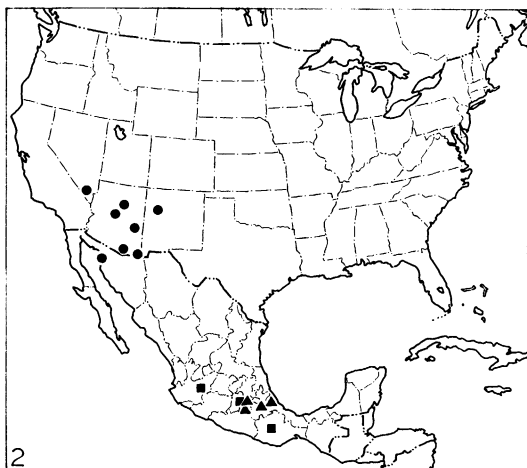


FIGS. 23-26. *Herpyllus sherus*, new species. 23. Palp, ventral view. 24. Palp, retrolateral view. 25. Epigynum, ventral view. 26. Vulva, dorsal view.



FIGS. 27-30. *Herpyllus frio*, new species. 27. Palp, ventral view. 28. Palp, retrolateral view. 29. Epigynum, ventral view. 30. Vulva, dorsal view.

0.52, back width 0.47. Tip of embolus with distinct twist (fig. 27). Retrolateral tibial apophysis with distally directed invagination at tip (fig. 28). Leg spination: tibiae: I p1-0-1; II p0-0-1,



MAP 2. North America, showing distribution of *Herpyllus excelsus* (circles), *H. sherus* (squares), and *H. frio* (triangles).

v1p-1p-1p; III p2-2-2; IV d0-0-0, r0-1-1.

Female. Total length 8.24-11.27. Carapace 4.00-5.07 long, 2.95-3.49 wide. Femur II 2.53-3.06 long (nine specimens). Eye sizes and interdistances: AME 0.14, ALE 0.13, PME 0.14, PLE 0.14; AME-AME 0.16, AME-ALE 0.10, PME-PME 0.21, PME-PLE 0.21, ALE-PLE 0.21. MOQ length 0.54, front width 0.45, back width 0.48. Epigynum with straight, laterally directed lateral margins (fig. 29). Spermathecae rotund (fig. 30). Leg spination: tibiae: I v0-0-2; II v0-1p-2; III p1-1-1, r1-1-1; IV d0-0-0.

Records. Mexico: Distrito Federal: San Miguel. Morelos. Puebla: Río Frío. Veracruz: N side of Cofre de Perote; Tembladera.

Distribution. Eastern Mexico (map 2).

Natural History. Mature females have been taken in February, April, and August; specimens have been collected at elevations between 9650 and 12,500 feet.

Herpyllus cockerelli (Banks)

Figures 31-36; Map 3

Prothesima cockerelli Banks, 1901a, p. 571, figs.

2, 3 (one male and two female syntypes from Mesilla Park, Dona Ana County, New Mexico, in MCZ, examined).

Herpyllus cockerelli: Banks, 1910, p. 8. Roewer, 1954, p. 422. Bonnet, 1957, p. 2171.

Herpyllus cepeus Chamberlin, 1936b, p. 2, fig. 13 (female holotype from Gardner, Huerfano County, Colorado, in AMNH, examined). Roewer, 1954, p. 422. Bonnet, 1957, p. 2171. NEW SYNONYMY.

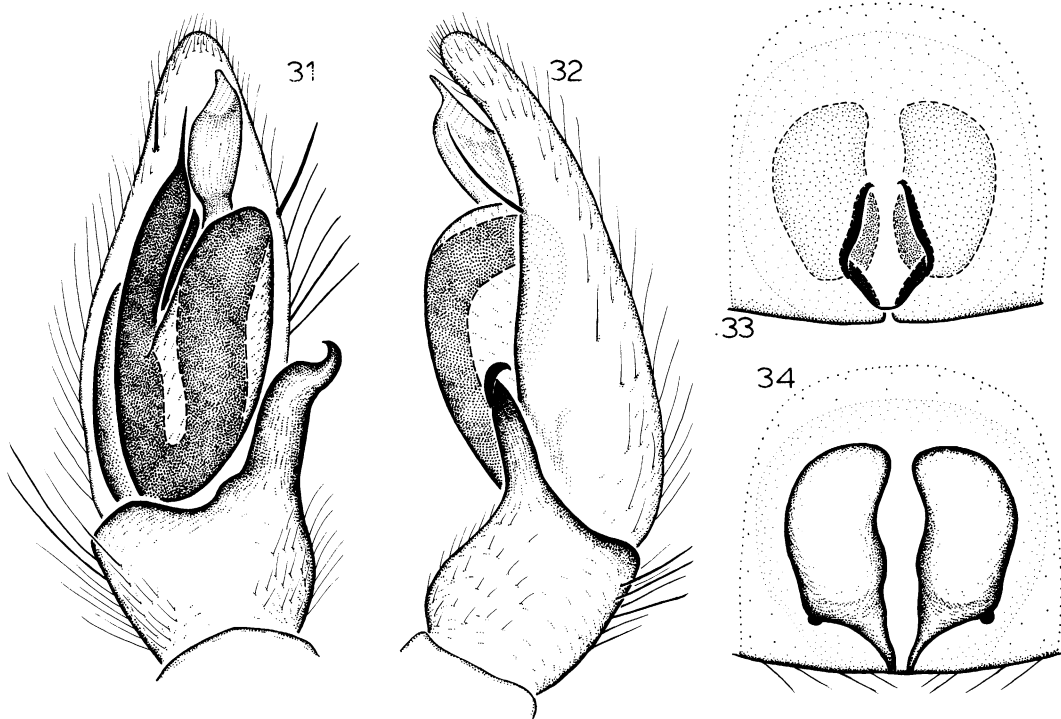
Diagnosis. *Herpyllus cockerelli* is closest to *H. scholasticus*; in both species the tip of the retrolateral tibial apophysis is recurved and the epigynum is diamond-shaped. Males of *H. cockerelli* may be distinguished by the much wider tibial apophysis (figs. 31, 35), females by the epigynal margins being widely separated anteriorly (figs. 33, 36).

Male. Total length 6.81 ± 0.75 . Carapace 3.23 ± 0.35 long, 2.41 ± 0.25 wide. Femur II 2.32 ± 0.18 long (17 specimens examined). Eye sizes and interdistances: AME 0.14, ALE 0.12, PME 0.11, PLE 0.14; AME-AME 0.12, AME-

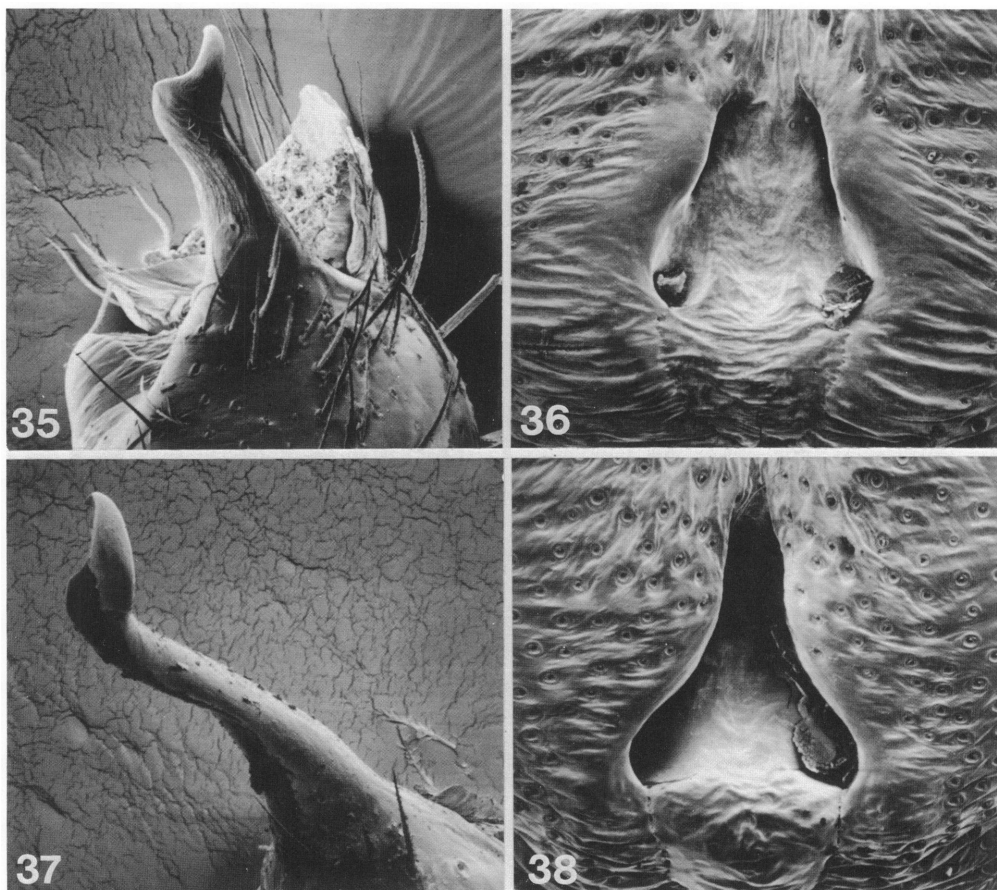
ALE 0.05, PME-PME 0.15, PME-PLE 0.13, ALE-PLE 0.11. MOQ length 0.43, front width 0.39, back width 0.37. Embolar base and tip relatively short (fig. 31). Retrolateral tibial apophysis wide, with recurved tip (figs. 32, 35). Leg spination: tibiae: I v1p-1p-2; II v0-1p-2; III p1-1-1, r1-1-1; IV d0-0-0; metatarsus III r0-1-2.

Female. Total length 8.23 ± 0.82 . Carapace 3.55 ± 0.38 long, 2.62 ± 0.27 wide. Femur II 2.28 ± 0.26 long (18 specimens examined). Eye sizes and interdistances: AME 0.16, ALE 0.13, PME 0.13, PLE 0.13; AME-AME 0.14, AME-ALE 0.06, PME-PME 0.19, PME-PLE 0.16, ALE-PLE 0.18. MOQ length 0.53, front width 0.45, back width 0.45. Epigynum diamond-shaped, with margins well separated anteriorly (figs. 33, 36). Spermathecae bulky (fig. 34). Leg spination: tibiae: I, II v0-1p-2; III p1-1-1, r1-1-1; IV d0-0-0.

Records. **United States:** *Arizona:* Cochise Co.: Chiricahua Mountains; Portal; Southwestern Research Station. Coconino Co.: Jacob Lake; Williams. *Colorado:* Huerfano Co.: Gardner.



FIGS. 31-34. *Herpyllus cockerelli* (Banks). 31. Palp, ventral view. 32. Palp, retrolateral view. 33. Epigynum, ventral view. 34. Vulva, dorsal view.



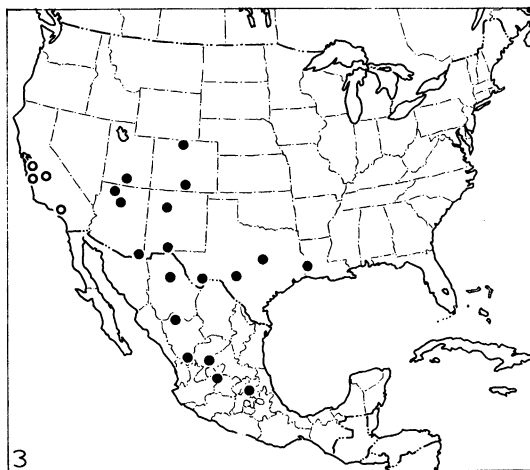
FIGS. 35-38. Scanning electron micrographs, 190X. 35, 36. *Herpyllus cockerelli* (Banks). 37, 38. *H. scholasticus* Chamberlin. 35, 37. Retrolateral tibial apophysis, lateral view. 36, 38. Epigynum, ventral view.

Larimer Co.: Estes Park, Moraine Park, Rocky Mountain National Park. *Louisiana*: Beauregard Par.: De Ridder. *New Mexico*: Bernalillo Co.: Alameda Bridge. Dona Ana Co.: Los Cruces; Mesilla Park. *Texas*: Brewster Co.: Chisos Mountains, Big Bend National Park. Coryell Co.: Gatesville. Sutton Co. *Utah*: Garfield Co.: Red Canyon Camp, 11 mi. SE Panguitch. *Mexico*: *Chihuahua*: Primavera. *Durango*: 10 mi. E El Salto; Villa Ocampo. *Hidalgo*: 5 mi. NW Actopan. *Jalisco*: 16 mi. SW Ojuelos. *Zacatecas*: Guadalupe.

Distribution. Utah east to Louisiana, south to Hidalgo (map 3).

Synonymy. No genitalic differences were detected in the holotype of *cepeus* that would serve to separate it from other specimens of *cockerelli*.

Natural History. Mature males and females have been taken year-round; specimens have been



MAP 3. North America, showing distribution of *Herpyllus cockerelli* (closed circles) and *H. scholasticus* (open circles).

collected at elevations up to 8000 feet, in houses, and under cottonwood bark.

Herpyllus scholasticus Chamberlin

Figures 37-42; Map 3

Herpyllus scholasticus Chamberlin, 1922, p. 2174 (female holotype from Stanford, Santa Clara County, California, in MCZ, examined). Roewer, 1954, p. 423. Bonnet, 1957, p. 2174.

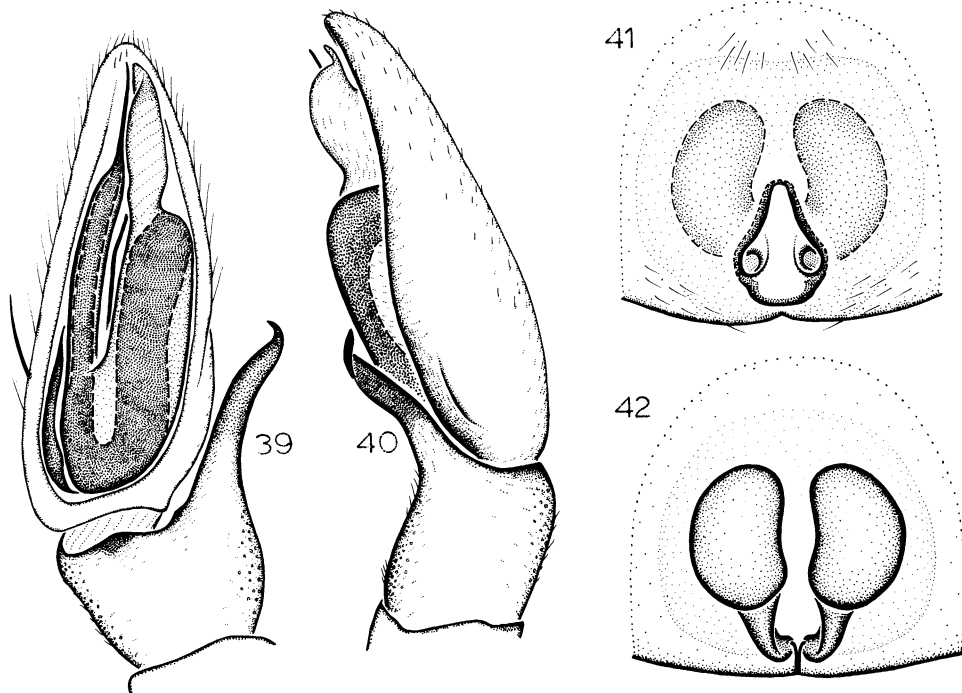
Diagnosis. *Herpyllus scholasticus* is closest to *H. cockerelli* but may be distinguished by the narrower retrolateral tibial apophysis (figs. 37, 39) and the anteriorly approximate epigynal margins (figs. 38, 41).

Male. Total length 6.98-8.75. Carapace 3.02-4.03 long, 2.30-2.99 wide. Femur II 2.02-2.66 long (seven specimens). Eye sizes and interdistances: AME 0.11, ALE 0.10, PME 0.11, PLE 0.12; AME-AME 0.15, AME-ALE 0.05, PME-PME 0.15, PME-PLE 0.13, ALE-PLE 0.14. MOQ length 0.46, front width 0.37, back width

0.36. Embolar base and tip relatively long (fig. 39). Retrolateral tibial apophysis narrow, with recurved tip (figs. 37, 40). Leg spination: patella III r0-0-0; tibiae: I v0-0-2; II v0-1p-2; III d0-0-0, p1-1-1; IV d0-0-0, p1-0-1, v1p-2-2, r1-0-1; metatarsus III p0-2-2, r0-1-2.

Female. Total length 9.05±1.24. Carapace 4.14±0.41 long, 3.01±0.31 wide. Femur II 2.52±0.30 long (15 specimens examined). Eye sizes and interdistances: AME 0.15, ALE 0.14, PME 0.13, PLE 0.12; AME-AME 0.16, AME-ALE 0.08, PME-PME 0.23, PME-PLE 0.23, ALE-PLE 0.20. MOQ length 0.55, front width 0.47, back width 0.48. Epigynum diamond-shaped, with margins approximate anteriorly (figs. 38, 41). Spermathecae short, situated anteriorly, outwardly curved at middle (fig. 42). Leg spination: tibiae: I v0-1p-1p; II v0-1p-2; III d0-0-0, p1-1-1, v1p-2-2; IV d0-0-0, v1p-2-2; metatarsus III p0-2-2, r0-1-2.

Records. **United States:** *California:* Fresno Co.: Dalton Creek; Shaver Lake. Los Angeles



FIGS. 39-42. *Herpyllus scholasticus* Chamberlin. 39. Palp, ventral view. 40. Palp, retrolateral view. 41. Epigynum, ventral view. 42. Vulva, dorsal view.

Co.: Chatsworth. Monterey Co.: Hastings Natural History Reserve; Junipero Serra Peak, Santa Lucia Mountains. Santa Clara Co.: Stanford.

Distribution. Known only from California (map 3).

Natural History. Mature males have been taken from July through November, mature females year-round; specimens have been collected at elevations up to 5800 feet, in houses, and under bark.

Herpyllus reservatus Chamberlin

Figures 21, 22, 43-46; Map 4

Herpyllus reservatus Chamberlin, 1936b, p. 3, fig. 15 (female holotype from Tucson, Pima County, Arizona, in AMNH, examined). Roewer, 1954, p. 423. Bonnet, 1957, p. 2174.

Diagnosis. *Herpyllus reservatus* seems closest to *H. pictus*; both species have long, sharply pointed retrolateral tibial apophyses and emboli notched below their tip. Males of *H. reservatus* may be distinguished by the shorter tibial apophysis (figs. 21, 43), females by the anteriorly connected epigynal margins (figs. 22, 45).

Male. Total length 6.77±0.86. Carapace 3.17±0.38 long, 2.43±0.33 wide. Femur II 2.53±0.29 long (18 specimens examined). Eye sizes and interdistances: AME 0.10, ALE 0.09, PME 0.12, PLE 0.12; AME-AME 0.11, AME-ALE 0.04, PME-PME 0.10, PME-PLE 0.10, ALE-PLE 0.09. MOQ length 0.42, front width 0.31, back width 0.34. Embolus notched below tip (fig. 43). Retrolateral tibial apophysis relatively short, sharply pointed (figs. 21, 44). Leg spination: tibiae: I p1-0-1; II p1-0-1, v1p-1p-1p; III p3-1-1; IV d0-0-0, p2-1-1.

Female. Total length 7.96-11.41. Carapace 3.36-4.93 long, 2.56-3.38 wide. Femur II 2.36-3.02 long (nine specimens). Eye sizes and interdistances: AME 0.16, ALE 0.16, PME 0.14, PLE 0.16; AME-AME 0.19, AME-ALE 0.07, PME-PME 0.20, PME-PLE 0.24, ALE-PLE 0.20. MOQ length 0.59, front width 0.52, back width 0.48. Lateral margins of epigynum connected anteriorly (figs. 22, 45). Spermathecae bulky, with basal lobes (fig. 46). Leg spination: tibiae: I p1-0-1; II p0-0-1, v1p-1p-1p; III v1p-2-2; IV d0-0-0, v1p-2-2, r0-1-1.

Records, United States: Arizona: Cochise Co.: Chiricahua Mountains; Fort Bowie; Portal; South Fork; Southwestern Research Station. Maricopa Co.: Phoenix. Pima Co.: Tucson. **New Mexico:** Hidalgo Co.: Rodeo. **Mexico:** Sonora: Minas Nuevas.

Distribution. Arizona, New Mexico, and Sonora (map 4).

Natural History. Mature males have been taken in July and August, mature females in August and September; specimens have been collected at elevations up to 5400 feet, in houses, and in pitfall traps.

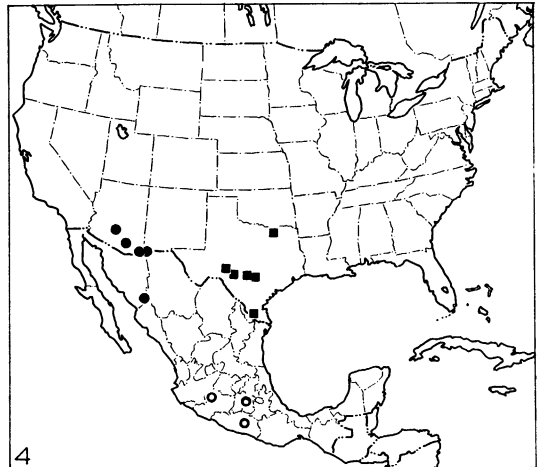
Herpyllus pictus (F. O. P.-Cambridge)

Figures 47-50; Map 4

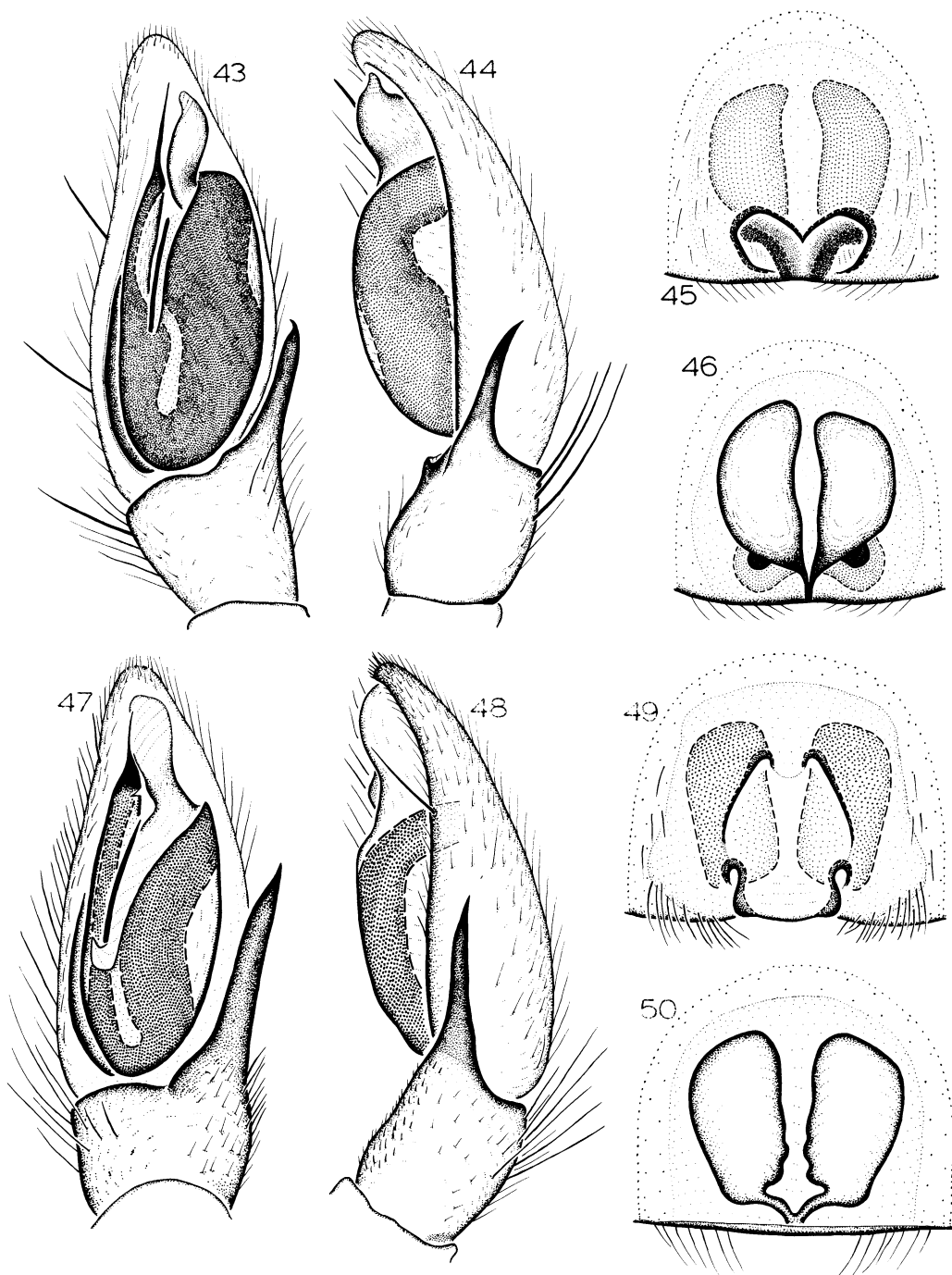
Scotophaeus pictus F. O. P.-Cambridge, 1899, p. 59, pl. 4, fig. 14 (female lectotype here designated from Omiltemi, Guerrero, Mexico, in BMNH, examined; not female paralectotype, =*Herpyllus fidelis*). Roewer, 1954, p. 437. Bonnet, 1958, p. 3970.

Herpyllus pictus: Ubick and Roth, 1973, p. 2.

Diagnosis. *Herpyllus pictus* seems closest to *H. reservatus* but may be distinguished by the longer tibial apophysis (figs. 47, 48) and the anteriorly unconnected epigynal margins (fig. 49).



MAP 4. North America, showing distribution of *Herpyllus reservatus* (closed circles), *H. pictus* (open circles), and *H. regnans* (squares).



FIGS. 43-46. *Herpyllus reservatus* Chamberlin. 43. Palp, ventral view. 44. Palp, retrolateral view. 45. Epigynum, ventral view. 46. Vulva, dorsal view.

FIGS. 47-50. *Herpyllus pictus* (F. O. P.-Cambridge). 47. Palp, ventral view. 48. Palp, retrolateral view. 49. Epigynum, ventral view. 50. Vulva, dorsal view.

Male. Total length 6.41. Carapace 3.02 long, 2.30 wide. Femur II 2.03 long (one specimen, AMNH). Eye sizes and interdistances: AME 0.12, ALE 0.11, PME 0.11, PLE 0.13; AME-AME 0.09, AME-ALE 0.05, PME-PME 0.12, PME-PLE 0.13, ALE-PLE 0.11. MOQ length 0.48, front width 0.33, back width 0.33. Embolus notched below tip (fig. 47). Retrolateral tibial apophysis relatively long, sharply pointed (fig. 48). Leg spination: femur III r0-1-2; tibiae: I v1p-1p-2; II v0-1p-2; III r1-1-1; IV d0-0-0.

Female. Total length 6.46-10.40. Carapace 3.33-3.42 long, 2.20-2.50 wide. Femur II 1.94-2.05 long (three specimens). Eye sizes and interdistances: AME 0.14, ALE 0.12, PME 0.12, PLE 0.12; AME-AME 0.09, AME-ALE 0.04, PME-PME 0.14, PME-PLE 0.15, ALE-PLE 0.14. MOQ length 0.45, front width 0.37, back width 0.28. Lateral margins of epigynum not connected anteriorly (fig. 49). Median margins of spermathecae sinuous (fig. 50). Leg spination: tibiae: I v0-1p-1p; IV d0-0-0, p1-0-1, v1p-2-2.

Records. **Mexico**: *Distrito Federal*: 15 mi. S

El Guarda. *Guerrero*: Omiltemi. *Michoacán*: Zamora.

Distribution. Southern Mexico (map 4).

Natural History. A mature male has been taken in August, mature females in September and November.

Herpyllus emertoni Bryant

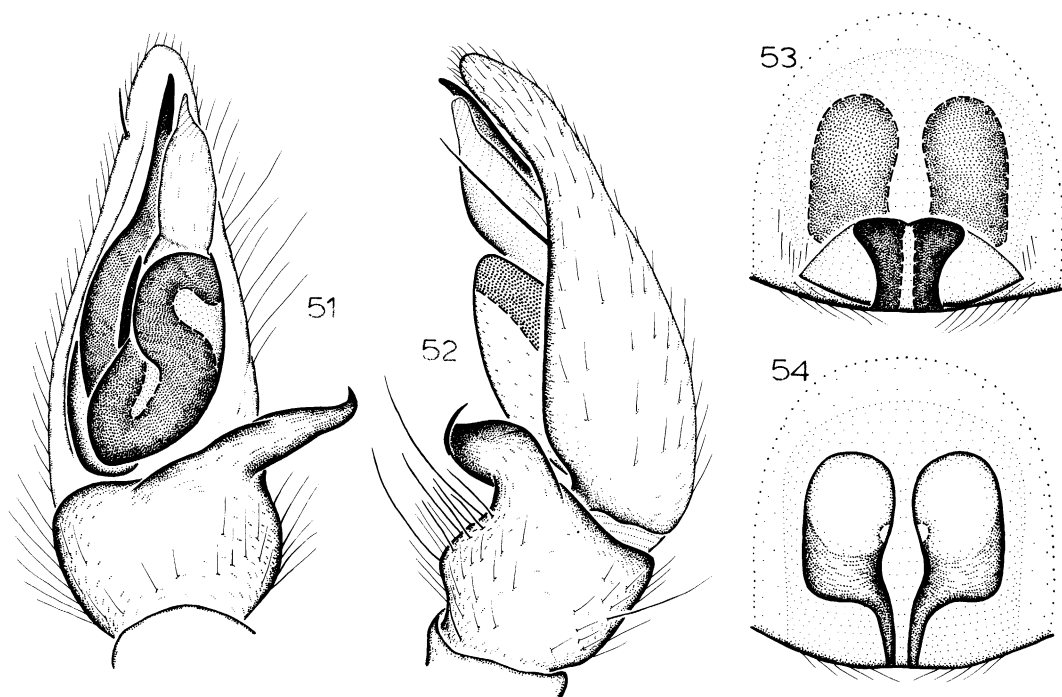
Figures 51-56; Map 5

Herpyllus emertoni Bryant, 1935, p. 73, figs. 1, 2 (female holotype from Dunedin, Pinellas County, Florida, in MCZ, examined). Roewer, 1954, p. 422. Bonnet, 1957, p. 2173.

Herpyllus bryophilus Chamberlin, 1936b, p. 1, fig. 9 (female holotype from Tallulah, Madison Parish, Louisiana, in AMNH, examined). Roewer, 1954, p. 422. Bonnet, 1957, p. 2171. **NEW SYNONYMY**.

Herpyllus itamus Chamberlin, 1936b, p. 2, fig. 10 (female holotype from Hastings, Saint Johns County, Florida, in AMNH, examined). Roewer, 1954, p. 422. Bonnet, 1957, p. 2173. **NEW SYNONYMY**.

Herpyllus faxoni Bryant, 1936, p. 96, fig. 6 (fe-



FIGS. 51-54. *Herpyllus emertoni* Bryant. 51. Palp, ventral view. 52. Palp, retrolateral view. 53. Epigynum, ventral view. 54. Vulva, dorsal view.

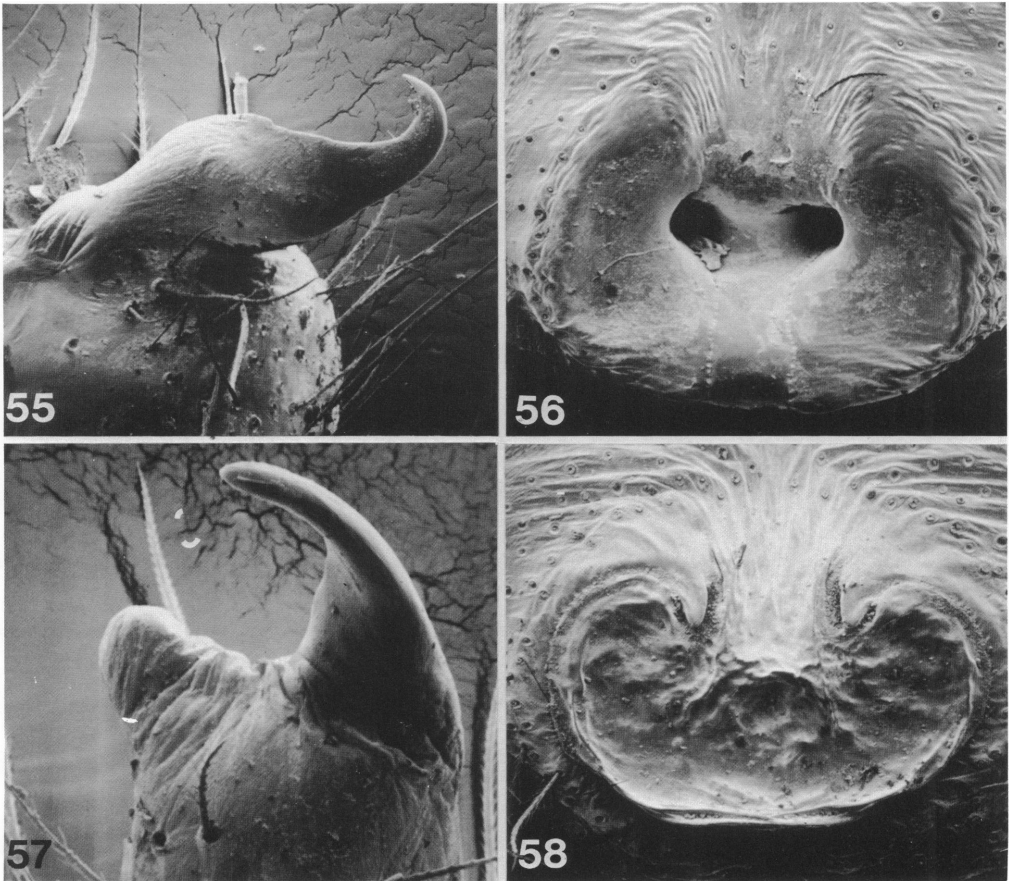
male holotype from Sebastian, Indian River County, Florida, in MCZ, examined). Roewer, 1954, p. 422. Bonnet, 1957, p. 2173. NEW SYNONYMY.

Diagnosis. *Herpyllus emertoni* is closest to *H. iguala*; both species have dorsoventrally compressed retrolateral tibial apophyses and closely approximate epigynal margins. Males of *H. emertoni* may be distinguished by the straight embolus (fig. 51), females by the rectangular, narrowly separated spermathecae (fig. 54).

Male. Total length 5.17 ± 0.68 . Carapace 2.43 ± 0.23 long, 1.80 ± 0.17 wide. Femur II 1.66 ± 0.17 long (12 specimens examined). Eye sizes and interdistances: AME 0.14, ALE 0.14,

PME 0.13, PLE 0.13; AME-AME 0.11, AME-ALE 0.04, PME-PME 0.13, PME-PLE 0.12, ALE-PLE 0.07. MOQ length 0.42, front width 0.40, back width 0.39. Embolus long, thick (fig. 51). Retrolateral tibial apophysis long, dorsoventrally compressed (figs. 52, 55). Leg spination: tibiae: II p0-0-1, v1p-1p-1p; IV d0-0-0; metatarsus III p0-2-2, r0-1-2.

Female. Total length 6.60 ± 0.97 . Carapace 2.74 ± 0.25 long, 1.93 ± 0.19 wide. Femur II 1.74 ± 0.17 long (30 specimens examined). Eye sizes and interdistances: AME 0.12, ALE 0.13, PME 0.12, PLE 0.12; AME-AME 0.13, AME-ALE 0.04, PME-PME 0.13, PME-PLE 0.11, ALE-PLE 0.10. MOQ length 0.46, front width 0.38, back width 0.36. Epigynal margins approxi-



FIGS. 55-58. 55, 56. *Herpyllus emertoni* Bryant. 55. Retrolateral tibial apophysis, lateral view, 190X. 56. Epigynum, ventral view, 190X. 57, 58. *H. gertschi*, new species. 57. Retrolateral tibial apophysis, lateral view, 475X. 58. Epigynum, ventral view, 190X.

mate (figs. 53, 56). Spermathecae rectangular, anteriorly situated, narrowly separated (fig. 54). Leg spination: tibiae: I v0-1p-1p; II p0-0-1; III v1p-2-2; IV d0-0-0, p1-0-1, v1p-2-2, r1-0-1; metatarsus III p0-2-2, r0-1-2.

Records. United States: *Florida:* Alachua Co.: Gainesville; Payne's Prairie. Clay Co.: Green Cove Springs. Dade Co.: Miami. Gilchrist Co. Hendry Co.: Clewiston. Highlands Co.: Highlands Hammock; Lake Placid. Indian River Co.: Sebastian. Lake Co.: Eustis. Manatee Co.: Myakka River State Park. Pinellas Co.: Dunedin. Polk Co.: Auburndale; Winter Haven. Putnam Co. Saint Johns Co.: Hastings. *Louisiana:* East Baton Rouge Par.: Baton Rouge. Madison Par.: Tallulah.

Distribution. Louisiana east to Florida (map 5).

Synonymy. Females of this species usually bear irregularly shaped epigynal plugs which distort the appearance of the epigynum; when these plugs were removed from the epigyna of the type specimens of *bryophilus*, *itamus*, and *faxonii*, all showed the same basic structure as that of *emertoni*.

Natural History. Mature males have been taken from October through March, mature females from October through May; specimens have been collected in pitfall traps, under bark of rotting oaks, and associated with Spanish moss.

Herpyllus iguala, new species

Figures 59-62; Map 5

Types. Male holotype from Iguala, Guerrero, Mexico (June 2, 1946; J. C. Pallister) and female paratype from Ajijic, Jalisco, Mexico (July 28, 1954; W. J. Gertsch), deposited in AMNH.

Etymology. The specific name is a noun in apposition taken from the type locality.

Diagnosis. *Herpyllus iguala* is closest to *H. emertoni* but may be distinguished by the curved embolus (fig. 59) and the ovoid, well-separated spermathecae (fig. 62).

Male. Total length 5.02. Carapace 2.23 long, 1.64 wide. Femur II 1.58 long (holotype). Eye sizes and interdistances: AME 0.13, ALE 0.12, PME 0.12, PLE 0.13; AME-AME 0.08, AME-ALE 0.03, PME-PME 0.10, PME-PLE 0.09, ALE-PLE 0.06. MOQ length 0.40, front width 0.34, back width 0.34. Embolus curved, expanded below tip (fig. 59). Retrolateral tibial

apophysis short, dorsoventrally compressed (fig. 60). Leg spination: femur II r1-0-1; tibiae: I p1-0-0, v2-2-1p; II p0-0-1, v1p-2-2; III v1p-2-2; IV d0-0-0, v1p-2-2, r0-1-1; metatarsus III p0-2-2.

Female. Total length 4.57-8.75. Carapace 2.05-2.66 long, 1.55-2.09 wide. Femur II 1.35-1.80 long (five specimens). Eye sizes and interdistances: AME 0.13, ALE 0.10, PME 0.09, PLE 0.10; AME-AME 0.07, AME-ALE 0.03, PME-PME 0.13, PME-PLE 0.09, ALE-PLE 0.06. MOQ length 0.36, front width 0.33, back width 0.31. Epigynal margins approximate (fig. 61). Spermathecae ovoid, anteriorly situated, well separated (fig. 62). Leg spination: tibiae: II p0-0-1; III v1p-2-2; IV d0-0-0, v1p-2-2, r0-1-1.

Records. Mexico: *Guerrero:* Iguala. *Jalisco:* Ajijic. *Morelos:* Oaxtepec; Teomixla. *Tamaulipas:* El Limón. *Veracruz:* 4 mi. SW Puente Nacional.

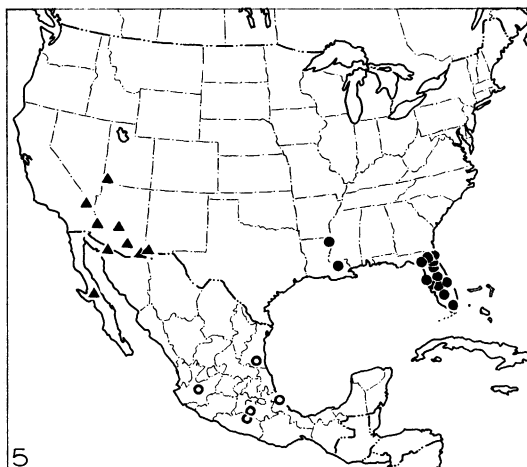
Distribution. Central Mexico (map 5).

Natural History. Mature females have been taken in January, March, May, July, and August; one specimen was collected in bromeliads at an elevation of 600 feet.

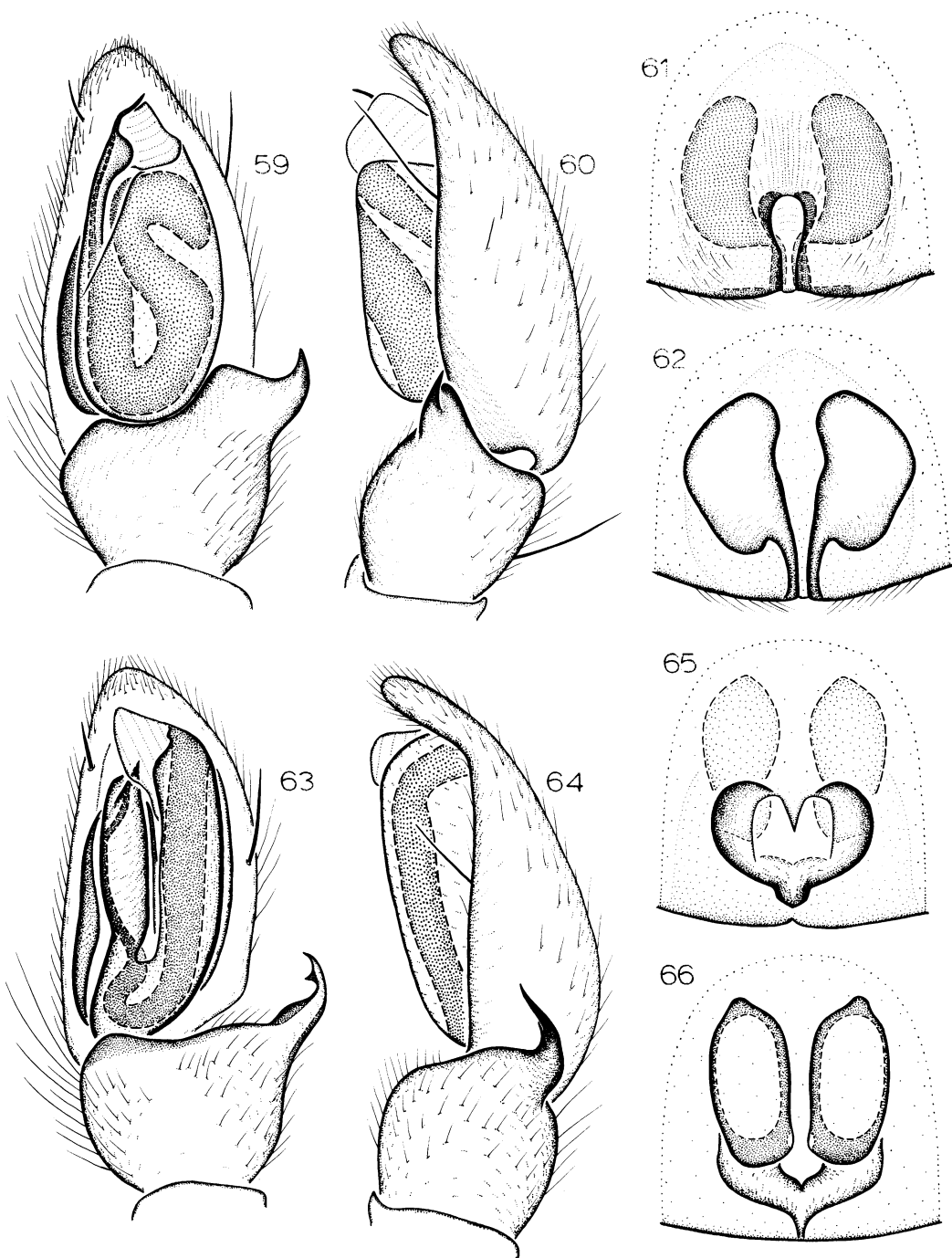
Herpyllus hesperolus Chamberlin

Figures 63-68; Map 6

Prothesima valida Banks, 1896, p. 62 (male and female syntypes from Los Angeles, Los Angeles County, California, in MCZ, examined).



MAP 5. North America, showing distribution of *Herpyllus emertoni* (closed circles), *H. iguala* (open circles), and *H. convallis* (triangles).



FIGS. 59-62. *Herpyllus iguala*, new species. 59. Palp, ventral view. 60. Palp, retrolateral view. 61. Epigynum, ventral view. 62. Vulva, dorsal view.

FIGS. 63-66. *Herpyllus hesperolus* Chamberlin. 63. Palp, ventral view. 64. Palp, retrolateral view. 65. Epigynum, ventral view. 66. Vulva, dorsal view.

Herpyllus validus: Banks, 1904b, p. 337. Roewer, 1954, p. 423. Bonnet, 1957, p. 2174.

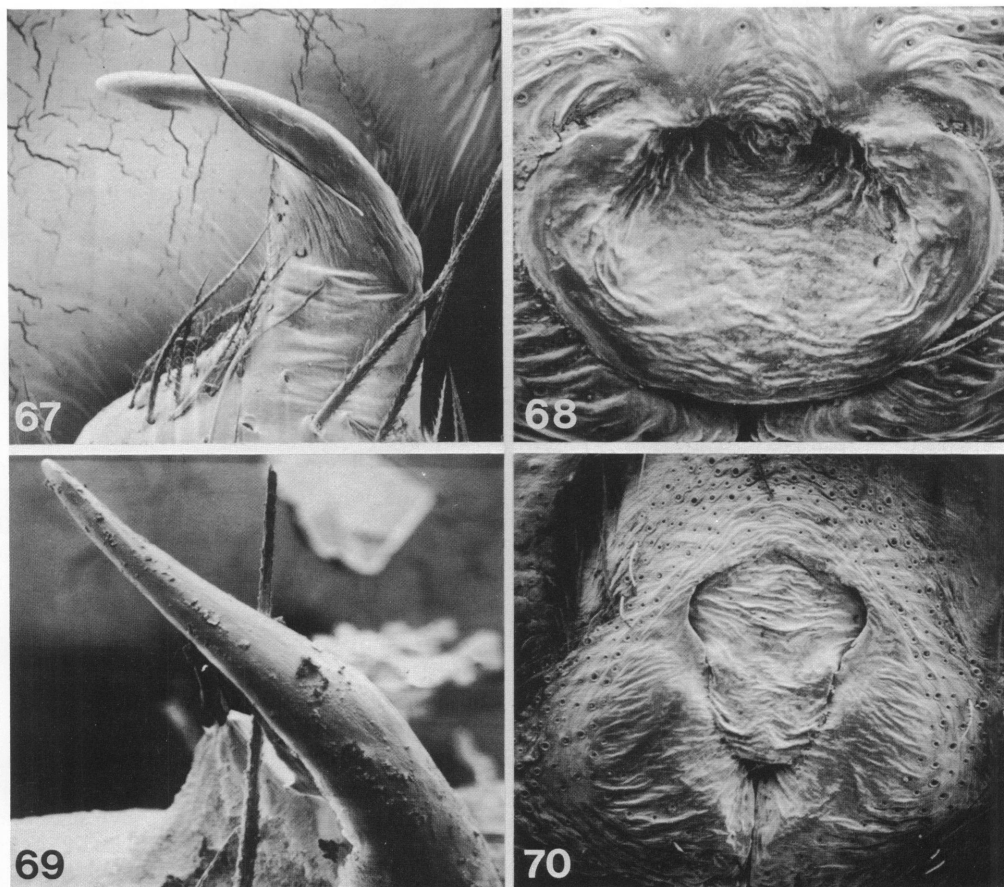
Herpyllus hesperolus Chamberlin, in Chamberlin and Gertsch, 1928, p. 176 (*nomen novum* for *Prothesima valida*, preoccupied in *Scotophaeus*).

Diagnosis. *Herpyllus hesperolus* is closest to *H. bensonae*; both species have spikelike tibial apophyses and embolar tips arising at the side of a triangular base in males, and a heart-shaped epigynum in females. Males of *H. hesperolus* may be distinguished by the bifid tip of the retrolateral tibial apophysis (fig. 63), females by the longer epigynal margins (figs. 65, 68).

Male. Total length 6.53 ± 0.62 . Carapace

2.94 ± 0.27 long, 2.30 ± 0.15 wide. Femur II 2.27 ± 0.25 long (276 specimens examined). Eye sizes and interdistances: AME 0.14, ALE 0.14, PME 0.14, PLE 0.15; AME-AME 0.13, AME-ALE 0.03, PME-PME 0.13, PME-PLE 0.15, ALE-PLE 0.12. MOQ length 0.48, front width 0.41, back width 0.41. Embolar tip arising from side of triangular base (fig. 63). Retrolateral tibial apophysis bifid at tip (figs. 64, 67). Leg spination: femur IV r0-1-1; patella III p0-1-0; tibiae: I, II p1-0-1, v2-2-2; III r1-1-1; metatarsus III r1-2-2.

Female. Total length 8.78 ± 1.42 . Carapace 3.45 ± 0.46 long, 2.66 ± 0.32 wide. Femur II 2.46 ± 0.27 long (402 specimens examined). Eye sizes and interdistances: AME 0.14, ALE 0.12,



FIGS. 67-70. 67, 68. *Herpyllus hesperolus* Chamberlin. 67. Retrolateral tibial apophysis, lateral view, 260X. 68. Epigynum, ventral view, 190X. 69, 70. *H. convallis* Chamberlin. 69. Retrolateral tibial apophysis, lateral view, 475X. 70. Epigynum, ventral view, 95X.

PME 0.14, PLE 0.13; AME-AME 0.14, AME-ALE 0.04, PME-PME 0.14, PME-PLE 0.17, ALE-PLE 0.14. MOQ length 0.52, front width 0.41, back width 0.41. Epigynal atrium heart-shaped, lateral margins relatively long (figs. 65, 68). Spermathecae narrowed anteriorly (fig. 66). Leg spination: femur IV r0-1-1; tibia IV v1p-2-2, r0-1-1.

Records. Canada: *Alberta*: Medicine Hat. *British Columbia*: Summerland. *Saskatchewan*: Big Meddy Valley, near Bengough. **United States** (county records only): *Arizona*: Cochise, Pima, Yuma. *California*: Contra Costa, Fresno, Imperial, Inyo, Kern, Los Angeles, Mariposa, Mendocino, Modoc, Mono, Monterey, Placer, Plumas, Riverside, San Bernardino, San Diego, Santa Barbara, Shasta, Sierra, Siskiyou, Stanislaus, Tulare, Tuolumne. *Colorado*: Mesa. *Idaho*: Bear Lake, Canyon, Gooding, Payette, Washington. *Montana*: Big Horn. *Nevada*: Clark, Douglas, Lander, Mineral, Nye, Pershing, Washoe. *New Mexico*: Bernalillo, Eddy, Hidalgo, Sandoval, San Miguel, Valencia. *Oregon*: Jackson, Jefferson, Klamath, Malheur. *Texas*: Brewster, Hudspeth, Pecos. *Utah*: Box Elder, Carbon, Davis, Duchesne, Emery, Grand, Morgan, Salt Lake, San Juan, Sevier, Tooele, Utah, Washington, Wayne. *Washington*: Grant, Kittitas, Spokane. *Mexico*: *Baja California Norte*: 23 mi. S El Mármol; 10, 41 mi. E El Rosario; Isla San Jerónimo; 8 mi. N Laguna Chapala; 2 mi. SW La Rumorosa; La Virgen; Punta Banda.

Distribution. British Columbia east to Saskatchewan, south to northern Baja California and western Texas (map 6).

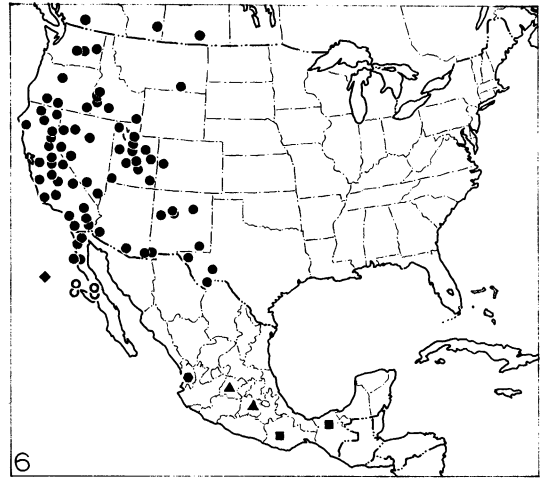
Name. The recently adopted changes in Article 59b of the International Code of Zoological Nomenclature necessitate the retention of the replacement name *hesperolus* even though *validus* is not preoccupied in *Herpyllus*.

Natural History. Mature males and females have been taken year-round; specimens have been collected at elevations up to 9500 feet, in houses, under rocks, and associated with sagebrush, juniper, ephedra, manzanita, and yucca.

Herpyllus bensonae Fox

Figures 71-74; Map 6

Herpyllus bensonae Fox, 1938, p. 232, pl. 1, fig. 7 (male holotype supposedly from the District



MAP 6. North America, showing distribution of *Herpyllus hesperolus* (closed circles), *H. bensonae* (open circles), *H. malkini* (hexagon), *H. brachet* (triangles), *H. fidelis* (squares) and *H. giganteus* (diamond).

of Columbia [misabeled], in USNM, examined). Roewer, 1954, p. 422. Bonnet, 1957, p. 2171.

Diagnosis. *Herpyllus bensonae* is closest to *H. hesperolus* but may be distinguished by the entire tip of the retrolateral tibial apophysis (figs. 71, 72) and the shorter epigynal margins (fig. 73).

Male. Total length 5.69-8.28. Carapace 2.59-3.85 long, 1.94-2.72 wide. Femur II 2.05-2.88 long (eight specimens). Eye sizes and interdistances: AME 0.12, ALE 0.10, PME 0.12, PLE 0.13; AME-AME 0.14, AME-ALE 0.05, PME-PME 0.14, PME-PLE 0.15, ALE-PLE 0.12. MOQ length 0.46, front width 0.38, back width 0.37. Embolar tip arising from side of triangular base (fig. 71). Retrolateral tibial apophysis not bifid at tip (fig. 72). Leg spination: tibiae: I, II p1-0-1, v2-2-2; IV r0-1-1.

Female. Total length 6.88-10.58. Carapace 2.95-4.03 long, 1.91-3.20 wide. Femur II 1.94-2.81 long (six specimens). Eye sizes and interdistances: AME 0.12, ALE 0.09, PME 0.11, PLE 0.12; AME-AME 0.14, AME-ALE 0.06, PME-PME 0.15, PME-PLE 0.18, ALE-PLE 0.13. MOQ length 0.42, front width 0.38, back width 0.37. Epigynal atrium heart-shaped, lateral mar-

gins relatively short (fig. 73). Spermathecae oval (fig. 74). Leg spination: femur IV p0-0-1; tibiae: I v0-1p-1p; III v1p-2-2; IV v1p-2-2, r0-1-1.

Records. **Mexico:** *Baja California Norte*: 18 mi. N Guerrero Negro; Isla Cedros. *Baja California Sur*: Isla Natividad; Laguna Ojo de Liebre.

Distribution. Central Baja California (map 6). The holotype, supposedly from the District of Columbia, is from the notoriously mislabeled Marx collection.

Natural History. Mature males and females have been taken from January through June; one specimen was collected under bark of a dead yucca.

Herpyllus convallis Chamberlin

Figures 69, 70, 75-78; Map 5

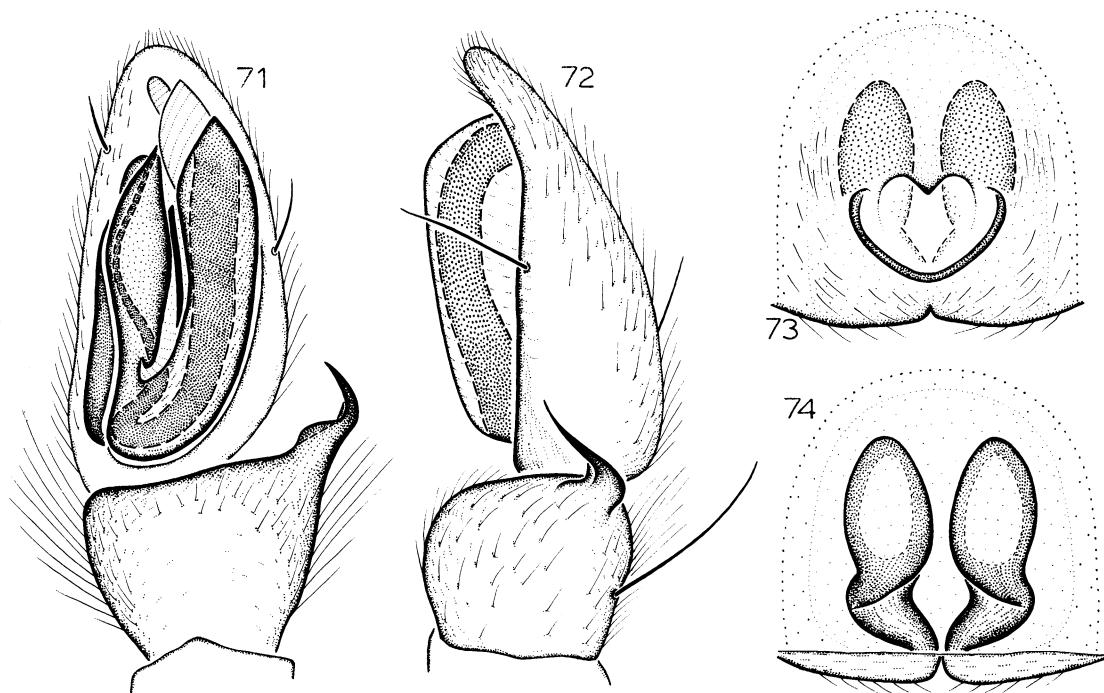
Herpyllus convallis Chamberlin, 1936a, p. 2, figs. 1-3 (male holotype from Scottsdale, Maricopa County, Arizona, in AMNH, examined). Roewer, 1954, p. 422. Bonnet, 1957, p. 2171.

Diagnosis. *Herpyllus convallis* is closest to *H.*

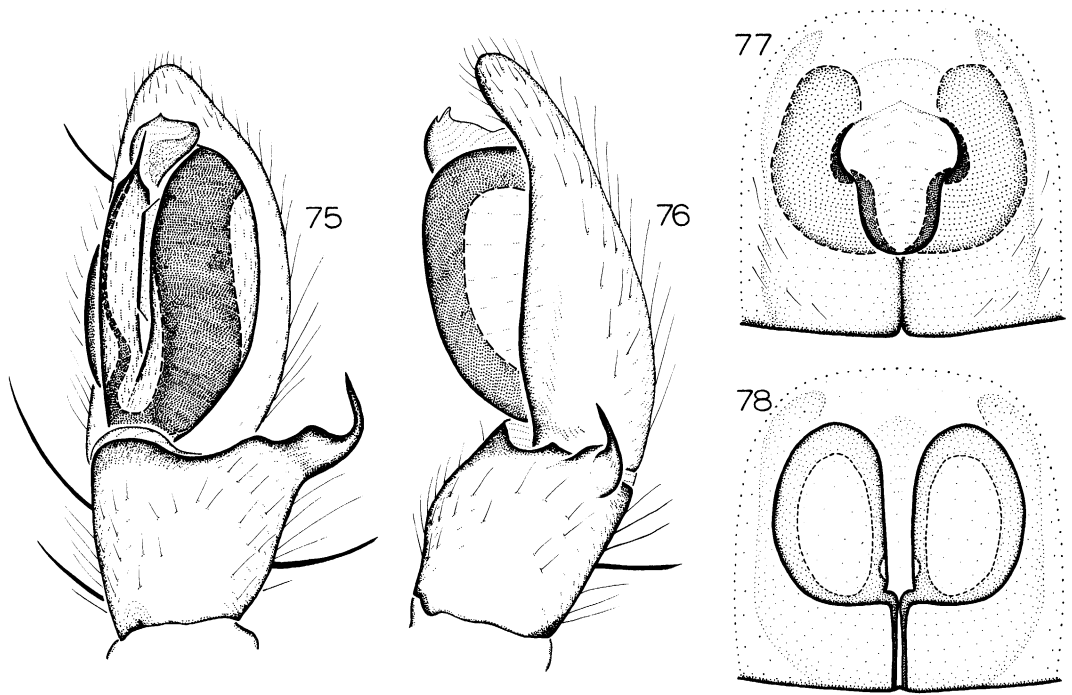
hesperolus and *H. bensonae* but may be distinguished by the embolar tip arising from the middle of a squared base (fig. 75) and the anteriorly situated epigynal atrium (figs. 70, 77).

Male. Total length 7.40 ± 0.89 . Carapace 3.55 ± 0.31 long, 2.66 ± 0.25 wide. Femur II 3.17 ± 0.38 long (16 specimens examined). Eye sizes and interdistances: AME 0.14, ALE 0.14, PME 0.14, PLE 0.12; AME-AME 0.14, AME-ALE 0.04, PME-PME 0.12, PME-PLE 0.16, ALE-PLE 0.12. MOQ length 0.47, front width 0.41, back width 0.40. Embolar tip arising from middle of squared base (fig. 75). Retrolateral tibial apophysis not bifid at tip (figs. 69, 76). Leg spination: tibiae: II p0-0-1; IV r0-1-1; metatarsus I v1p-0-0.

Female. Total length 10.46 ± 1.45 . Carapace 4.40 ± 0.28 long, 3.26 ± 0.37 wide. Femur II 3.07 ± 0.35 long (17 specimens examined). Eye sizes and interdistances: AME 0.15, ALE 0.15, PME 0.15, PLE 0.12; AME-AME 0.16, AME-ALE 0.07, PME-PME 0.16, PME-PLE 0.19, ALE-PLE 0.16. MOQ length 0.51, front width 0.47, back width 0.45. Epigynal atrium displaced anteriorly



FIGS. 71-74. *Herpyllus bensonae* Fox. 71. Palp, ventral view. 72. Palp, retrolateral view. 73. Epigynum, ventral view. 74. Vulva, dorsal view.



FIGS. 75-78. *Herpyllus convallis* Chamberlin. 75. Palp, ventral view. 76. Palp, retrolateral view. 77. Epigynum, ventral view. 78. Vulva, dorsal view.

(figs. 70, 77). Spermathecae rotund (fig. 78). Leg spination: tibiae: I v1p-1p-1p; II v0-1p-1p; III p0-1-1, v2-2-2, r0-1-1; IV r0-1-1.

Records. United States: *Arizona:* Cochise Co.: 18 mi. E Douglas; Slaughter Ranch. Maricopa Co.: Scottsdale; Tempe. Pima Co.: Tucson. Yuma Co.: 1 mi. E Gila Valley Canal; Salome. *California:* San Bernardino Co.: Sacramento Spring. *New Mexico:* Hidalgo Co.: 17 mi. N Rodeo. *Utah:* Washington Co.: St. George; Zion National Park. *Mexico:* *Baja California Sur:* San Ignacio. *Sonora:* Sonoyta.

Distribution. Utah south to central Baja California (map 5).

Natural History. Mature males and females have been taken from December through May; specimens have been collected by beating shrubs.

Herpyllus schwarzi (Banks)

Figures 79-84; Map 7

Prothesima schwarzi Banks, 1901b, p. 582, fig. 7 (female holotype from Catalina Springs, Pima

County, Arizona, may be in USNM, unavailable).

Herpyllus schwarzi: Banks, 1910, p. 8. Roewer, 1954, p. 423. Bonnet, 1957, p. 2174.

Diagnosis. *Herpyllus schwarzi* seems closest to *H. bubulcus*; both species have a prolateral tubercle on the retrolateral tibial apophysis that does not form a distinct lobe, and they replace each other geographically (map 7). Males of *H. schwarzi* may be distinguished by the dorsal prong of the tibial apophysis being relatively wide and close to the tubercle (figs. 80, 83), females by the posteriorly widened epigynum (figs. 81, 84).

Male. Total length 8.31 ± 1.12 . Carapace 3.86 ± 0.45 long, 2.97 ± 0.31 wide. Femur II 3.02 ± 0.35 long (108 specimens examined). Eye sizes and interdistances: AME 0.12, ALE 0.12, PME 0.12, PLE 0.13; AME-AME 0.14, AME-ALE 0.07, PME-PME 0.12, PME-PLE 0.18, ALE-PLE 0.17. MOQ length 0.49, front width 0.38, back width 0.37. Embolus not displaced laterally (fig. 79). Retrolateral tibial apophysis with dorsal

prong wide, situated near small tubercle (figs. 80, 83). Leg spination: femur IV r0-1-1; tibiae: I p1-0-0, v2-2-2; II p1-0-1, v2-2-2.

Female. Total length 10.60 ± 2.21 . Carapace 4.46 ± 0.51 long, 3.33 ± 0.33 wide. Femur II 2.96 ± 0.30 long (61 specimens examined). Eye sizes and interdistances: AME 0.14, ALE 0.11, PME 0.14, PLE 0.17; AME-AME 0.17, AME-ALE 0.09, PME-PME 0.19, PME-PLE 0.27, ALE-PLE 0.31. MOQ length 0.57, front width 0.46, back width 0.47. Epigynum widened posteriorly (figs. 81, 84). Spermathecae greatly narrowed anteriorly (fig. 82). Leg spination: patella III p0-1-0; tibiae: I, II v1p-1p-2; III r1-1-1.

Records. United States: *Arizona:* Cochise Co.: Apache; Bisbee; Chiricahua Mountains; Fort Bowie; Carr Canyon, Miller Canyon, Montezuma Pass, Huachuca Mountains; Portal; Southwestern Research Station; Turkey Creek; Warren. Maricopa Co.: Phoenix. Pima Co.: Catalina Springs; Organ Pipe Cactus National Monument; Santa Catalina Mountains; Madera Canyon, Santa Rita Mountains; Tucson. Santa Cruz Co.: Nogales;

Patagonia. *California:* San Bernardino Co.: Pleasant Valley, Joshua Tree National Monument. *Nevada:* Nye Co.: Mercury. Washoe Co.: Reno. *New Mexico:* Hidalgo Co.: Animas Valley; Antelope Pass, Peloncillo Mountains; San Luis Pass.

Distribution. Southern California east to southwestern New Mexico (map 7).

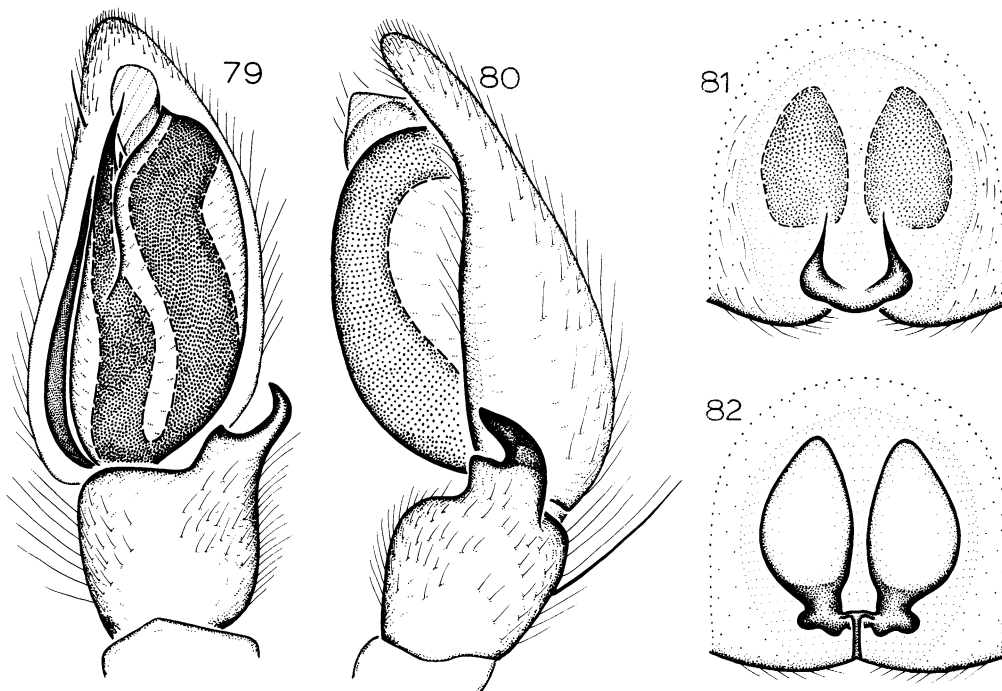
Natural History. Mature males have been taken from October through March, mature females from November through July; specimens have been collected at elevations up to 6000 feet, in houses, under rocks, and being carried by a sphecoid wasp.

Herpyllus bubulcus Chamberlin

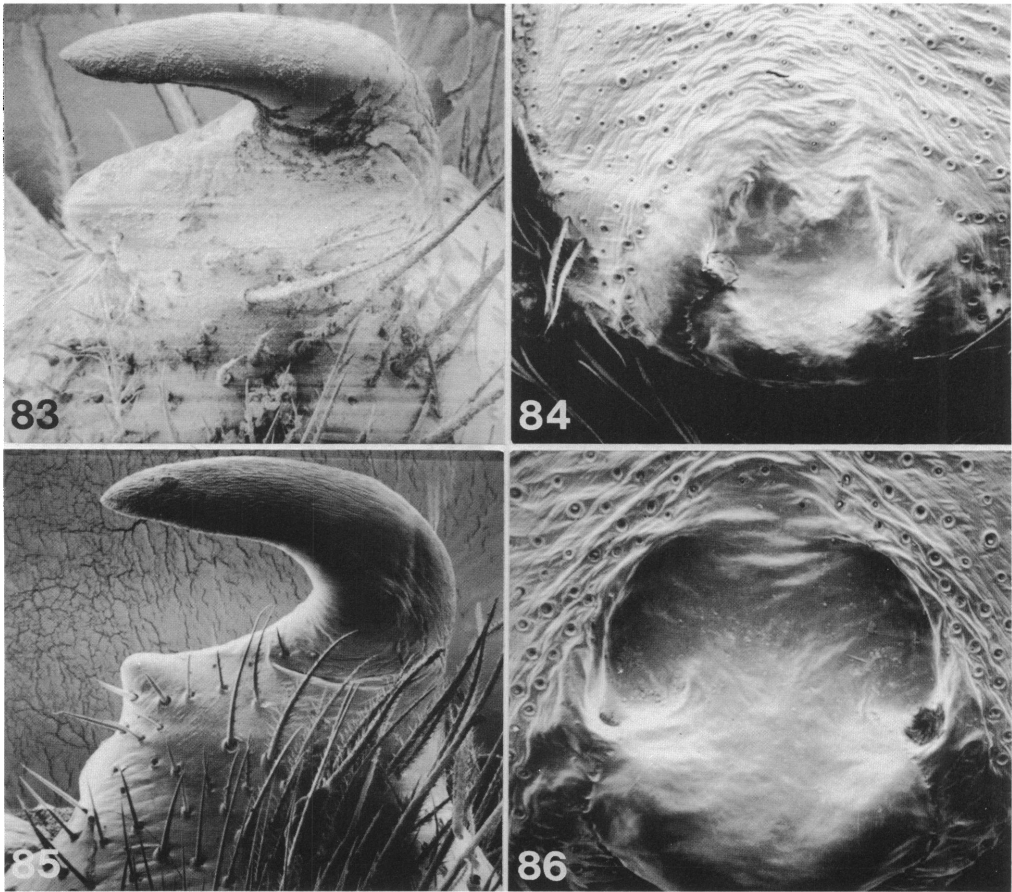
Figures 85-90; Map 7

Herpyllus bubulcus Chamberlin, 1922, p. 150 (female holotype from Altudo, Brewster County, Texas, in MCZ, examined). Roewer, 1954, p. 422. Bonnet, 1957, p. 2171.

Diagnosis. *Herpyllus bubulcus* seems closest to *H. schwarzi* but may be distinguished by the dor-



FIGS. 79-82. *Herpyllus schwarzi* (Banks). 79. Palp, ventral view. 80. Palp, retrolateral view. 81. Epigynum, ventral view. 82. Vulva, dorsal view.



FIGS. 83-86. 83, 84. *Herpyllus schwarzi* (Banks). 83. Retrolateral tibial apophysis, lateral view, 260 $\times$. 84. Epigynum, ventral view, 130 $\times$. 85, 86. *H. bubulcus* Chamberlin. 85. Retrolateral tibial apophysis, lateral view, 190 $\times$. 86. Epigynum, ventral view, 190 $\times$.

sal prong of the retrolateral tibial apophysis being relatively narrow and far from the tubercle on the apophysis (figs. 85, 88) and the medially widened epigynum (figs. 86, 89). The female is similar to that of *H. regnans* but the epigynum is wider than long.

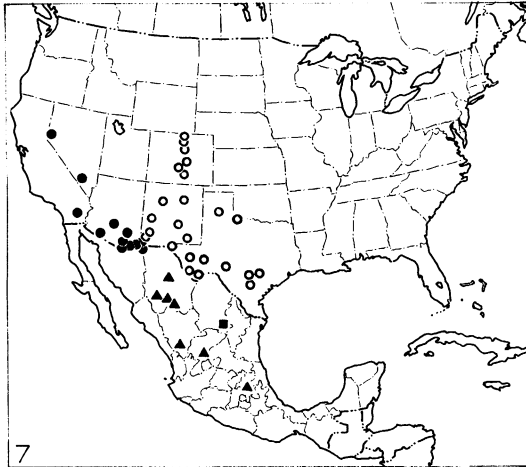
Male. Total length 8.18 ± 0.72 . Carapace 3.78 ± 0.34 long, 2.82 ± 0.25 wide. Femur II 2.87 ± 0.26 long (29 specimens examined). Eye sizes and interdistances: AME 0.15, ALE 0.14, PME 0.15, PLE 0.17; AME-AME 0.15, AME-ALE 0.06, PME-PME 0.15, PME-PLE 0.18, ALE-PLE 0.17. MOQ length 0.56, front width 0.46, back width 0.45. Embolus not displaced laterally (fig. 87). Retrolateral tibial apophysis with dorsal prong narrow, situated far from small

tubercle (figs. 85, 88). Leg spination: patella III p0-1-0; tibiae I, II v1p-2-2.

Female. Total length 9.71 ± 2.01 . Carapace 4.35 ± 0.59 long, 3.27 ± 0.47 wide. Femur II 2.96 ± 0.44 long (49 specimens examined). Eye sizes and interdistances: AME 0.11, ALE 0.14, PME 0.13, PLE 0.14; AME-AME 0.16, AME-ALE 0.05, PME-PME 0.13, PME-PLE 0.16, ALE-PLE 0.11. MOQ length 0.44, front width 0.39, back width 0.38. Epigynum widened medially, wider than long (figs. 86, 89). Spermathecae slightly narrowed anteriorly (fig. 90). Leg spination: tibiae: I v0-1p-1p; II v0-1p-2; IV r0-1-1.

Records. **United States:** *Colorado:* Boulder Co.: Boulder; Lyons. *El Paso Co.* Fremont Co.: 10 mi. N Canyon City; Wet Mountains. *Jefferson*

Co.: Plum Creek. Larimer Co.: 20 mi. NW Fort Collins. Pueblo Co.: Boone. *New Mexico*: Bernalillo Co.: Cedro Canyon, Manzano Mountains. Catron Co.: Gila National Forest. Eddy Co.:



MAP 7. North America, showing distribution of *Herpyllus schwarzi* (closed circles), *H. bubulcus* (open circles), *H. perditus* (triangles), and *H. coahuilanus* (square).

Carlsbad Caverns; Hope; 3 mi. E Malaga. Grant Co.: Burro Mountains; Silver City. Hidalgo Co.: Lordsburg. Lincoln Co.: 4 mi. N Carrizozo. San Miguel Co.: Conchas Dam State Park. *Texas*: Armstrong Co.: Paloduro Canyon. Brewster Co.: Altudo; Basin, Chisos Mountains, Big Bend National Park. El Paso Co.: El Paso. Hardeman Co. Jeff Davis Co.: Fort Davis. Kendall Co.: Boerne. Llano Co. Pecos Co.: Sheffield. Presidio Co.: E Plata. Sutton Co. Travis Co.: Austin. *Mexico: Chihuahua*: Sierra del Nido.

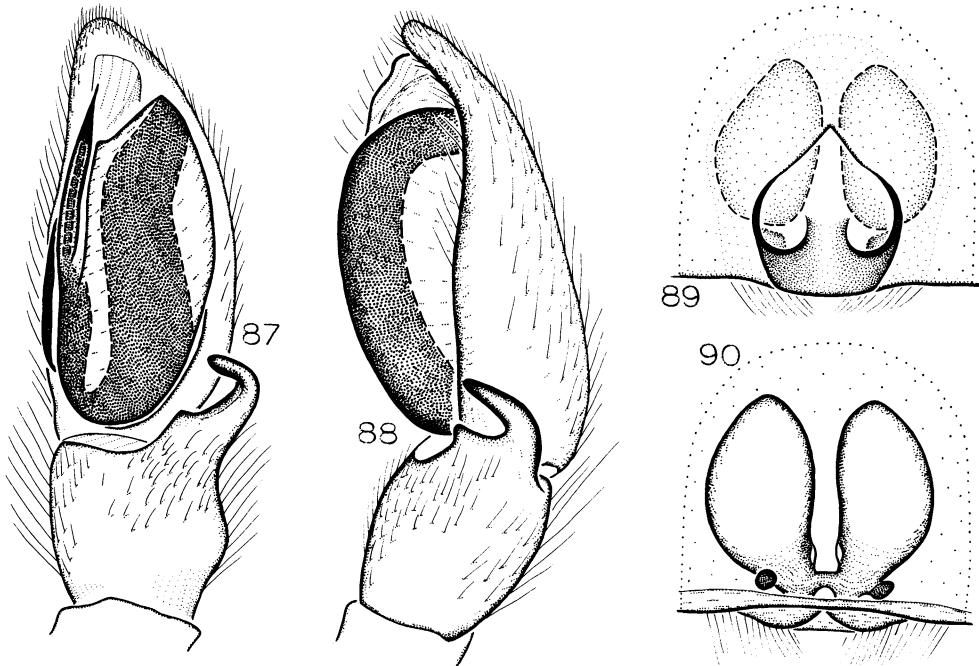
Distribution. Colorado, New Mexico, Texas, and Chihuahua (map 7).

Natural History. Mature males have been taken from September through April, mature females year-round; specimens have been collected at elevations up to 6100 feet, in houses, under rocks and bark, associated with pinyon pine, juniper, yucca, ephedra, nolina, and rabbit-brush, and in a bat chamber at Carlsbad Caverns.

Herpyllus regnans Chamberlin

Figures 91-94; Map 4

Herpyllus regnans Chamberlin, 1936b, p. 2, fig.



FIGS. 87-90. *Herpyllus bubulcus* Chamberlin. 87. Palp, ventral view. 88. Palp, retrolateral view. 89. Epigynum, ventral view. 90. Vulva, dorsal view.

14 (female holotype from Arroyo Solado, Zapata County, Texas, in AMNH, examined). Roewer, 1954, p. 423. Bonnet, 1957, p. 2174.

Diagnosis. *Herpyllus regnans* seems closest to *H. perditus*; both species have laterally displaced embolar tips and epigyna that are longer than wide. Males of *H. regnans* may be distinguished by the absence of a tubercle on the retrolateral tibial apophysis (figs. 91, 92), females by the presence of a median epigynal arch (fig. 93).

Male. Total length 8.06. Carapace 3.38 long, 2.70 wide. Femur II 2.59 long (one specimen, AMNH). Eye sizes and interdistances: AME 0.12, ALE 0.15, PME 0.14, PLE 0.13; AME-AME 0.16, AME-ALE 0.03, PME-PME 0.12, PME-PLE 0.18, ALE-PLE 0.14. MOQ length 0.51, front width 0.40, back width 0.40. Embolar tip displaced laterally (fig. 91). Retrolateral tibial apophysis lacking ventral tubercle (fig. 92). Leg spination: patella III p0-1-0; tibiae I, II p1-0-1, v2-2-2.

Female. Total length 9.11-13.43. Carapace 3.53-4.32 long, 2.53-3.24 wide. Femur II

2.52-2.88 long (five specimens). Eye sizes and interdistances: AME 0.16, ALE 0.14, PME 0.14, PLE 0.12; AME-AME 0.15, AME-ALE 0.06, PME-PME 0.17, PME-PLE 0.23, ALE-PLE 0.19. MOQ length 0.55, front width 0.46, back width 0.45. Epigynum longer than wide, with median arch (fig. 93). Spermathecae rectangular (fig. 94). Leg spination: patella III p0-1-0; tibiae: I v1p-1p-2; II v1p-2-2.

Records. United States: Texas: Crockett Co.: Lancaster Hill. Grayson Co.: Lake Texhona. Kendall Co.: 11 mi. SW Boerne. Kerr Co.: Raven Ranch. Sutton Co. Zapata Co.: Arroyo Solado.

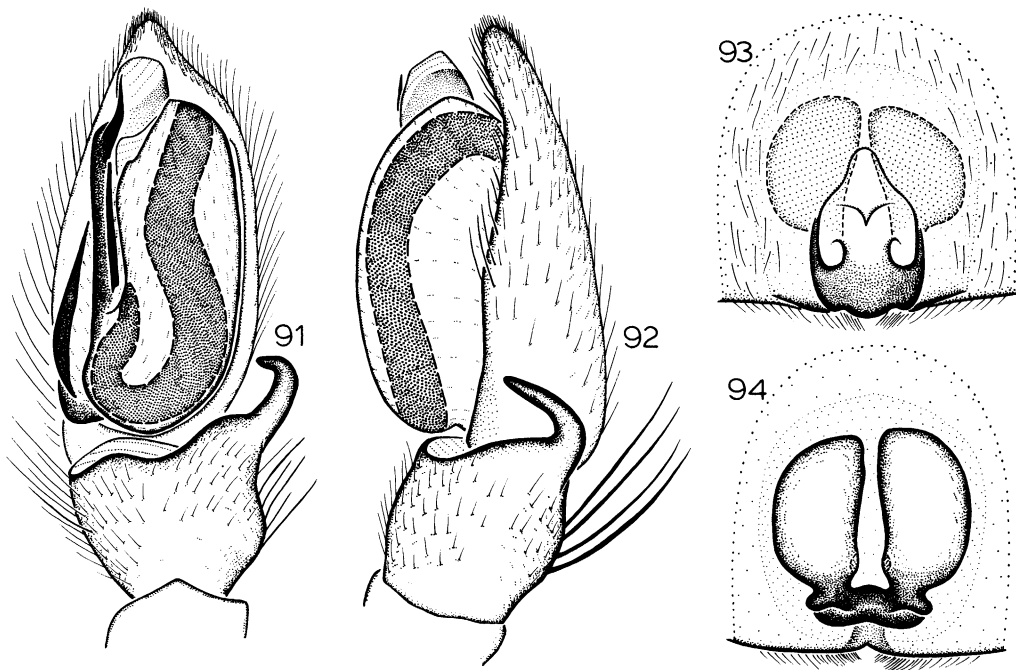
Distribution. Texas (map 4).

Natural History. A mature male was taken in December, mature females in February, May, and December; specimens have been collected under rocks and bark.

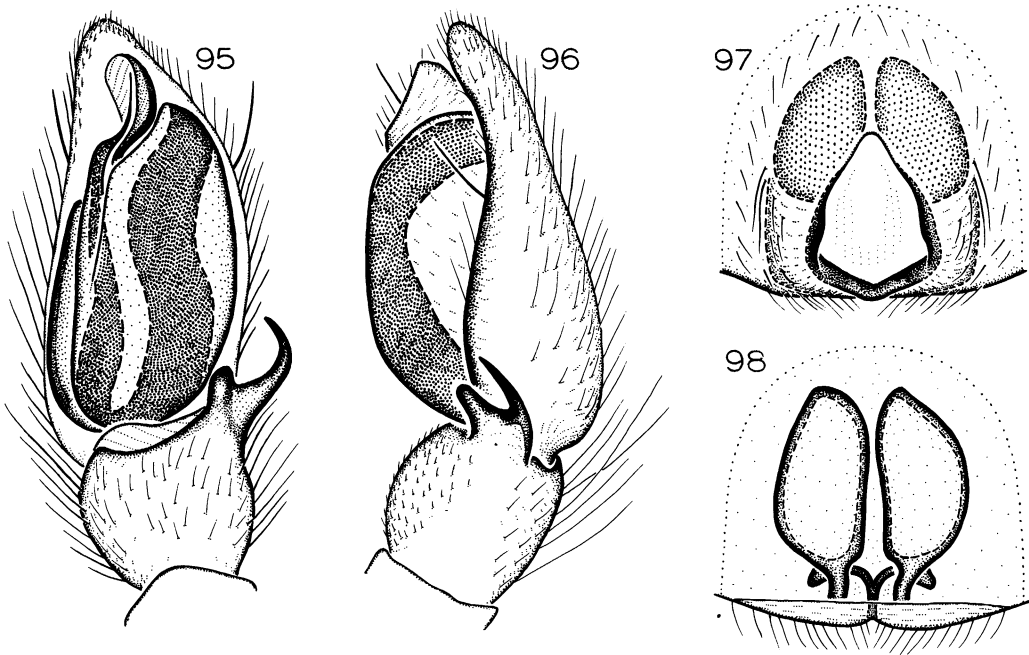
Herpyllus perditus (Banks)

Figures 95-98; Map 7

Drassodes perditus Banks, 1898, p. 216, pl. 13, fig. 7 (male syntype supposedly from Agua



FIGS. 91-94. *Herpyllus regnans* Chamberlin. 91. Palp, ventral view. 92. Palp, retrolateral view. 93. Epigynum, ventral view. 94. Vulva, dorsal view.



FIGS. 95-98. *Herpyllus perditus* (Banks). 95. Palp, ventral view. 96. Palp, retrolateral view. 97. Epigynum, ventral view. 98. Vulva, dorsal view.

Caliente, Baja California Sur, probably from Agua Caliente, Chihuahua, Mexico, in MCZ, examined). Roewer, 1954, p. 397. Bonnet, 1956, p. 1584.

Herpyllus perditus: Platnick and Shadab, 1976, p. 4.

Diagnosis. *Herpyllus perditus* seems closest to *H. regnans* but may be distinguished by the presence of a tubercle on the retrolateral tibial apophysis (figs. 95, 96) and the absence of a median epigynal arch (fig. 97).

Male. Total length 7.70-10.08. Carapace 3.58-4.36 long, 2.77-3.35 wide. Femur II 2.79-3.26 wide (six specimens). Eye sizes and interdistances: AME 0.13, ALE 0.11, PME 0.14, PLE 0.13; AME-AME 0.14, AME-ALE 0.04, PME-PME 0.14, PME-PLE 0.17, ALE-PLE 0.12. MOQ length 0.48, front width 0.41, back width 0.41. Embolar tip displaced laterally (fig. 95). Retrolateral tibial apophysis with ventral tubercle and elongate dorsal prong (fig. 96). Leg spination: patella III p0-1-0; tibiae: I p1-0-0, v2-2-2; II p1-0-1, v2-2-2; III r1-1-1.

Female. Total length 10.56±2.06. Carapace

4.33±0.37 long, 3.25±0.30 wide. Femur II 2.91±0.31 long (12 specimens examined). Eye sizes and interdistances: AME 0.16, ALE 0.14, PME 0.16, PLE 0.14; AME-AME 0.14, AME-ALE 0.05, PME-PME 0.14, PME-PLE 0.21, ALE-PLE 0.18. MOQ length 0.56, front width 0.46, back width 0.46. Epigynum longer than wide, without median arch (fig. 93). Spermathecae oval (fig. 94). Leg spination: patella III p0-1-0; tibiae I, II v0-1p-2; metatarsus III r1-2-2.

Records. Mexico: *Chihuahua*: Creel; summit W of Primavera; San Rafael; Santa Bárbara. *Durango*: Palos Colorados. *Hidalgo*: 4 mi. N Tizayuca. *Zacatecas*: Los Patos Pond, SE Zacatecas.

Distribution. Northern and central Mexico (map 7). It is possible that the syntype actually is from the Cape region of Baja California as Banks (1898) indicated, but several pieces of evidence indicate otherwise: no specimens are known from Baja California or Sonora; the species is common in the area of Agua Caliente, Chihuahua; and, most importantly, Banks admitted that when he acquired the material on which he

published in 1898 from Marx, many of the specimens bore no locality labels, and their origin was reconstructed with difficulty.

Natural History. Mature males have been taken from November through February, mature females year-round; specimens have been collected at elevations up to 8000 feet.

Herpyllus coahuilanus Gertsch and Davis

Figures 99-102; Map 7

Herpyllus coahuilanus Gertsch and Davis, 1940, p. 5, figs. 1, 2 (male holotype from Diamante Drive, 5 miles southeast of Saltillo, Coahuila, Mexico, in AMNH, examined). Roewer, 1954, p. 421.

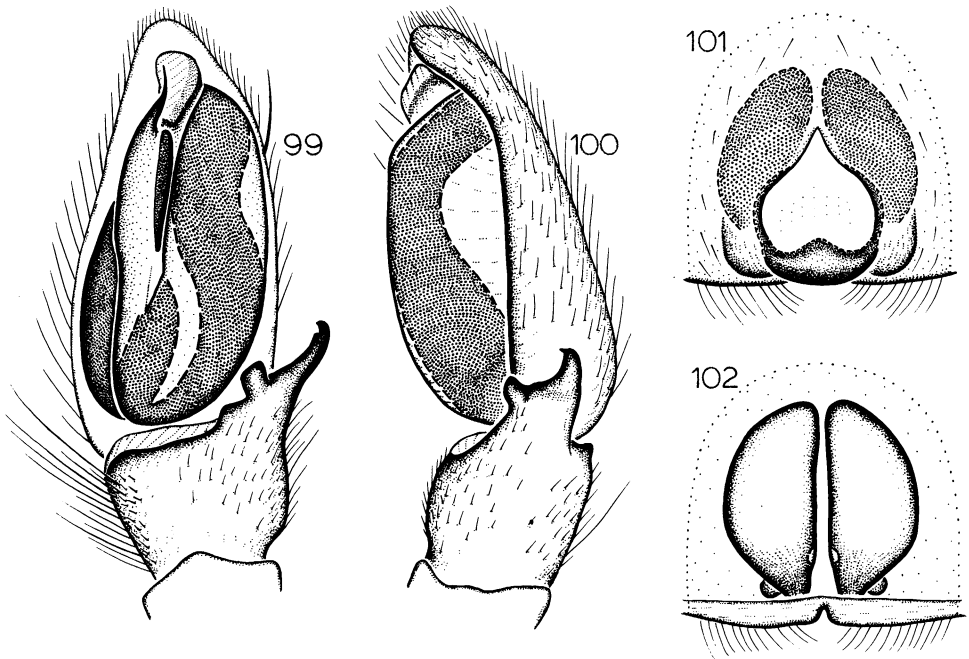
Diagnosis. *Herpyllus coahuilanus* seems closest to *H. gertschi*; males of both species have semi-circular concavities between the ventral tubercle and dorsal prong of the retrolateral tibial apophysis. Males of *H. coahuilanus* may be distinguished by the shorter tibial apophysis (figs. 99, 100), females by the anteriorly connected epigynal margins (fig. 101).

Male. Total length 6.88. Carapace 3.14 long, 2.30 wide. Femur II 2.23 long (holotype). Eye sizes and interdistances: AME 0.11, ALE 0.10, PME 0.12, PLE 0.12; AME-AME 0.10, AME-ALE 0.03, PME-PME 0.10, PME-PLE 0.14, ALE-PLE 0.16. MOQ length 0.46, front width 0.32, back width 0.34. Embolar tip sinuous (fig. 99). Retrolateral tibial apophysis with semi-circular excavation (fig. 100). Leg spination: femur IV r0-1-1; tibiae: I p1-0-0, v2-2-2; II p0-0-1, v2-2-2.

Female. Total length 9.01. Carapace 3.96 long, 3.06 wide. Femur II 2.66 long (allotype). Eye sizes and interdistances: AME 0.13, ALE 0.12, PME 0.14, PLE 0.16; AME-AME 0.17, AME-ALE 0.05, PME-PME 0.16, PME-PLE 0.21, ALE-PLE 0.20. MOQ length 0.54, front width 0.43, back width 0.43. Epigynal margins connected anteriorly (fig. 101). Spermathecae widened medially (fig. 102). Leg spination: patella III p0-1-0; tibiae: I v1p-1p-2; II v0-1p-2.

Records. Known only from the type specimens.

Distribution. Coahuila, Mexico (map 7).



FIGS. 99-102. *Herpyllus coahuilanus* Gertsch and Davis. 99. Palp, ventral view. 100. Palp, retrolateral view. 101. Epigynum, ventral view. 102. Vulva, dorsal view.

Natural History. The type specimens were collected in November.

***Herpyllus gertschi*, new species**

Figures 57, 58, 103-106; Map 8

Types. Male holotype and female paratype from the Southwestern Research Station, Cochise County, Arizona (April 1, 1970; V. Roth), deposited in AMNH.

Etymology. The specific name is a patronym in honor of Dr. Willis J. Gertsch, who first recognized the species as new.

Diagnosis. *Herpyllus gertschi* seems closest to *H. coahuilanus* but may be distinguished by the longer retrolateral tibial apophysis (figs. 57, 103, 104) and the presence of terminal hooks on the lateral epigynal margins (figs. 58, 105).

Male. Total length 6.48 ± 1.09 . Carapace 3.04 ± 0.43 long, 2.26 ± 0.34 wide. Femur II 2.06 ± 0.31 long (36 specimens examined). Eye sizes and interdistances: AME 0.09, ALE 0.11, PME 0.11, PLE 0.10; AME-AME 0.09, AME-ALE 0.04, PME-PME 0.07, PME-PLE 0.10, ALE-PLE 0.11. MOQ length 0.38, front width 0.26, back width 0.29. Embolar base relatively wide (fig. 103). Retrolateral tibial apophysis relatively long, tubercle situated distally (figs. 57, 104). Leg spination: tibiae: I v1p-1p-2; II v0-1p-2; III v1p-2-2; IV r0-1-1.

Female. Total length 8.39 ± 0.68 . Carapace 3.61 ± 0.30 long, 2.62 ± 0.20 wide. Femur II 2.23 ± 0.14 long (35 specimens examined). Eye sizes and interdistances: AME 0.11, ALE 0.11, PME 0.11, PLE 0.12; AME-AME 0.11, AME-ALE 0.04, PME-PME 0.12, PME-PLE 0.14, ALE-PLE 0.11. MOQ length 0.40, front width 0.33, back width 0.33. Epigynal margins terminating in distinct hooks (fig. 58, 105). Spermathecae with broad bases (fig. 106). Leg spination: tibiae: II v0-2-1p; III p1-1-1.

Records. **United States:** *Arizona:* Cochise Co.: Cave Creek; Rustler Park, Chiricahua Mountains; Carr Canyon, Huachuca Mountains; Portal; San Mateo Cliffs; South Fork; Southwestern Research Station; Turkey Creek. Gila Co.: Pinal Peak. Pima Co.: Brown Canyon, Baboquivari Mountains; Madera Canyon, Santa Rita Mountains. *California:* San Diego Co.: La Mesa. *New Mexico:* Grant Co.: Burro Mountains; Silver City. *Texas:* Brewster Co.: Basin, Chisos Moun-

tains, Big Bend National Park. **Mexico:** *Chihuahua:* Cañon Prieta, near Primavera. *Coahuila:* 1 mi. S Cedritos.

Distribution. Southern California east to Coahuila (map 8).

Natural History. Mature males have been taken year-round, mature females from March through October; specimens have been collected at elevations up to 8500 feet, under boards, in pitfall traps, and associated with pinyon pine, juniper, and nolina.

***Herpyllus perote*, new species**

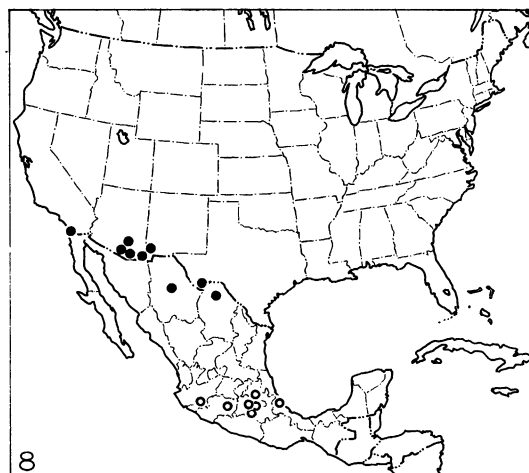
Figures 107-110; Map 8

Types. Male holotype and female paratype from an elevation of 9650 feet on the north side of Cofre de Perote, 10 miles south of Las Vigas, Veracruz, Mexico (August 24, 1967; R. E. Leech), deposited in AMNH, courtesy of Dr. Leech.

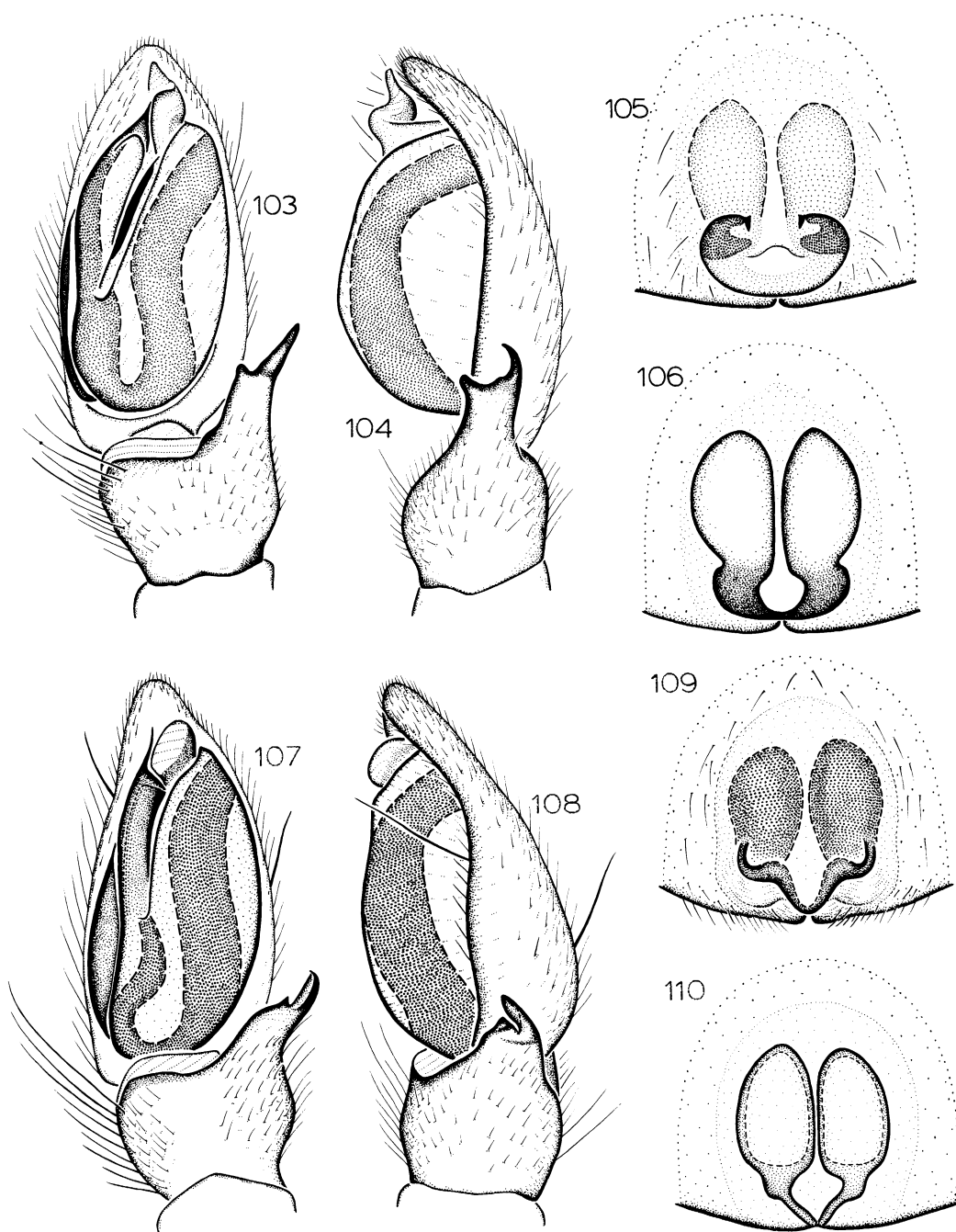
Etymology. The specific name is a noun in apposition taken from the type locality.

Diagnosis. *Herpyllus perote* is a distinctive species belonging to the *schwarzi* group and easily recognized by the peculiar form of the retrolateral tibial apophysis (figs. 107, 108) and the Y-shaped epigynum (fig. 109).

Male. Total length 5.98-8.34. Carapace 2.63-4.07 long, 1.98-2.99 wide. Femur II



MAP 8. North America, showing distribution of *Herpyllus gertschi* (closed circles) and *H. perote* (open circles).



FIGS. 103-106. *Herpyllus gertschi*, new species. 103. Palp, ventral view. 104. Palp, retrolateral view. 105. Epigynum, ventral view. 106. Vulva, dorsal view.

FIGS. 107-110. *Herpyllus perote*, new species. 107. Palp, ventral view. 108. Palp, retrolateral view. 109. Epigynum, ventral view. 110. Vulva, dorsal view.

1.87-2.59 long (eight specimens). Eye sizes and interdistances: AME 0.11, ALE 0.12, PME 0.13, PLE 0.12; AME-AME 0.13, AME-ALE 0.05, PME-PME 0.12, PME-PLE 0.14, ALE-PLE 0.15. MOQ length 0.48, front width 0.35, back width 0.38. Embolar tip relatively narrow (fig. 107). Dorsal prong and ventral tubercle of retrolateral tibial apophysis approximate (fig. 108). Leg spination: femur I p0-0-1; tibiae: I v1p-1p-2; II v0-2-2; III v1p-2-2; IV r0-1-1.

Female. Total length 8.82±1.06. Carapace 3.96±0.44 long, 2.96±0.34 wide. Femur II 2.37±0.18 long (10 specimens). Eye sizes and interdistances: AME 0.10, ALE 0.10, PME 0.13, PLE 0.13; AME-AME 0.12, AME-ALE 0.05, PME-PME 0.13, PME-PLE 0.17, ALE-PLE 0.15. MOQ length 0.48, front width 0.33, back width 0.38. Epigynum Y-shaped (fig. 109). Spermathecae abruptly narrowed posteriorly (fig. 110). Leg spination: femur I r0-0-1; tibiae: I v0-0-1p; III v1p-2-2; IV v1p-2-2, r0-1-1; metatarsus III r1-2-2.

Records. Mexico: Distrito Federal: Contreras. *Hidalgo:* Guerrero Mill. *Jalisco:* NE slope, Volcán de Colima. *México:* National Park near Las Cruces; Mt. Iztacchiuatl, 4 mi. N Paso de Cortez. *Michoacán:* Angahuán; Cerro del Tancitaro. *Morelos:* Cuernavaca. *Veracruz:* N side, Cofre de Perote, 10 mi. S Las Vigas; Tembladera, 13.3 mi. S Las Vigas.

Distribution. Central Mexico (map 8).

Natural History. Mature males have been taken from June through September, mature females from March through September; specimens have been collected at elevations between 9900 and 12,500 feet.

***Herpyllus malkini*, new species**

Figures 111, 112; Map 6

Type. Female holotype from Tepic, Nayarit, Mexico (September 15, 1953; B. Malkin), deposited in AMNH.

Etymology. The specific name is a patronym in honor of the collector of the holotype.

Diagnosis. *Herpyllus malkini* may be easily recognized by the elongate spermathecae (fig. 112) and recurved epigynal hood (fig. 111). The species may be a member of the *cockerelli* group;

the lateral epigynal margins resemble those of *H. pictus*.

Male. Unknown.

Female. Total length 8.64. Carapace 3.60 long, 2.54 wide. Femur II 2.38 long (holotype). Eye sizes and interdistances: AME 0.16, ALE 0.11, PME 0.14, PLE 0.16; AME-AME 0.16, AME-ALE 0.06, PME-PME 0.19, PME-PLE 0.18, ALE-PLE 0.14. MOQ length 0.59, front width 0.48, back width 0.37. Epigynum with hood (fig. 111). Spermathecae elongate (fig. 112). Leg spination: tibiae: I v1p-0-1p; II p0-0-1; IV d0-0-0, v1p-2-2, r0-1-1.

Records. Known only from the holotype.

Distribution. Nayarit, Mexico (map 6).

***Herpyllus brachet*, new species**

Figures 113, 114; Map 6

Type. Female holotype from Distrito Federal, no specific locality, Mexico (winter, 1941-1942; H. Wagner), deposited in AMNH.

Etymology. The specific name is an arbitrary combination of letters.

Diagnosis. *Herpyllus brachet* may be easily recognized by the sinuous lateral epigynal margins (fig. 113). The shape of the epigynum indicates that the species might belong to the *hesperolus* group but definite placement must await discovery of the male.

Male. Unknown.

Female. Total length 8.89, 9.36. Carapace 3.80, 3.85 long, 2.70, 2.81 wide. Femur II 2.28, 2.48 long (two specimens). Eye sizes and interdistances: AME 0.14, ALE 0.14, PME 0.12, PLE 0.15; AME-AME 0.12, AME-ALE 0.06, PME-PME 0.16, PME-PLE 0.16, ALE-PLE 0.15. MOQ length 0.52, front width 0.40, back width 0.41. Epigynum with sinuous lateral margins (fig. 113). Spermathecae with posterolateral extensions (fig. 114). Leg spination: tibiae: II v1p-1p-1p; IV d0-0-0; metatarsi I, II v1p-0-0.

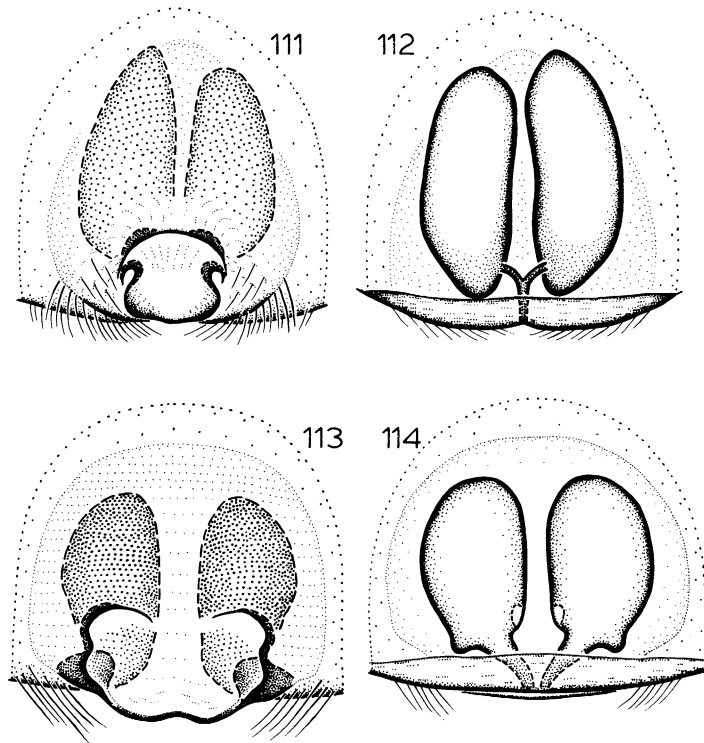
Records. Mexico: Distrito Federal. Guajuata.

Distribution. Central Mexico (map 8).

***Herpyllus fidelis* (O. P.-Cambridge), new combination**

Figures 115, 116; Map 6

Bonna fidelis O. P.-Cambridge, 1898, p. 250, pl.



FIGS. 111-114. 111, 112. *Herpyllus malkini*, new species. 113, 114. *H. brachet*, new species. 111, 113. Epigynum, ventral view. 112, 114. Vulva, dorsal view.

33, fig. 1 (female holotype from Teapa, Tabasco, Mexico, in BMNH, examined). Roewer, 1954, p. 410. Bonnet, 1955, p. 902.

Diagnosis. *Herpyllus fidelis* may be easily recognized by the outwardly curved lateral epigynal margins (fig. 115). The posterior extensions of the spermathecae resemble those of some species of the *schwarzi* group, but definite placement must await discovery of the male.

Male. Unknown.

Female. Total length 7.09, 7.68. Carapace 3.67, 3.86 long, 2.41, 2.76 wide. Femur II 2.20, 2.40 long (two specimens). Eye sizes and interdistances: AME 0.08, ALE 0.11, PME 0.12, PLE 0.14; AME-AME 0.21, AME-ALE 0.09, PME-PME 0.16, PME-PLE 0.18, ALE-PLE 0.18. MOQ length 0.51, front width 0.37, back width 0.41. Lateral epigynal margins outwardly curved at middle (fig. 115). Spermathecae each with two posterior extensions (fig. 116). Leg spination:

femur IV p0-0-1; patella IV r0-0-0; tibiae: I v0-1p-1p; IV d0-0-0, r0-1-1.

Records. Mexico: Guerrero: Omiltemi. Tabasco: Teapa.

Distribution. Southern Mexico (map 6).

Herpyllus giganteus, new species

Figures 117, 118; Map 6

Type. Female holotype from the northeast anchorage of Guadalupe Island, Mexico (February 14, 1973; J. D. Pinto), deposited in the University of California, Riverside, on long-term loan to CAS.

Etymology. The specific name is from the Latin.

Diagnosis. *Herpyllus giganteus* may be easily recognized by its large size and by the anteriorly expanded lateral epigynal margins (fig. 117). Judging from the median epigynal ridge, the species probably belongs to the *hesperolus* group.

Male. Unknown.

Female. Total length 17.28. Carapace 7.31 long, 5.51 wide. Femur II 5.06 long (holotype). Eye sizes and interdistances: AME 0.21, ALE 0.21, PME 0.21, PLE 0.26; AME-AME 0.27, AME-ALE 0.08, PME-PME 0.25, PME-PLE 0.38, ALE-PLE 0.43. MOQ length 0.88, front width 0.68, back width 0.68. Epigynal margins expanded anteriorly (fig. 117). Spermathecae elongate (fig. 118). Leg spination: femur IV r0-1-1; tibiae: I, II v1p-2-2; III r1-1-1; metatarsi: III v2-2-2, r1-2-2; IV r2-2-2.

Records. Known only from the holotype.

Distribution. Guadalupe Island, Mexico (map 6).

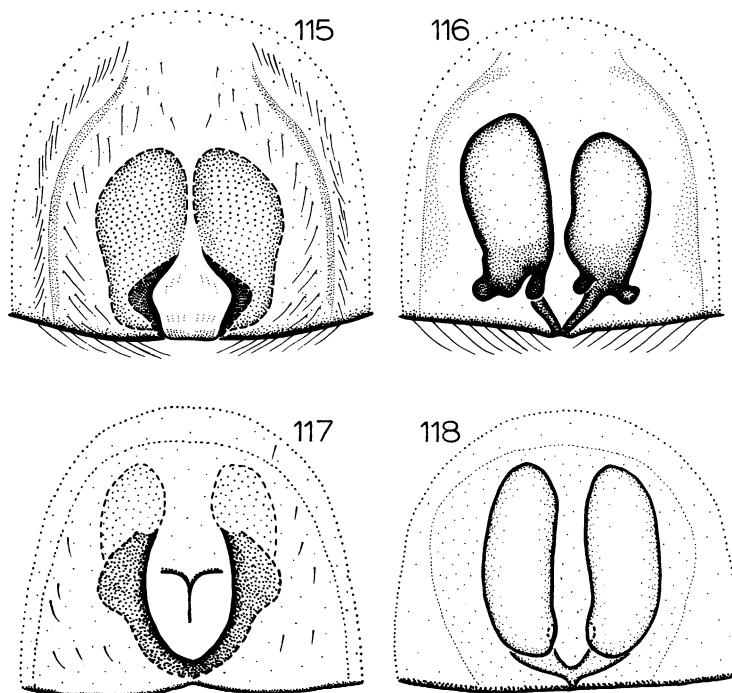
SCOTOPHAEUS SIMON

Scotophaeus Simon, 1893b, p. 371 (type species by original designation *Aranea quadripunctata* Linnaeus). Roewer, 1954, p. 432. Bonnet, 1958, p. 3964.

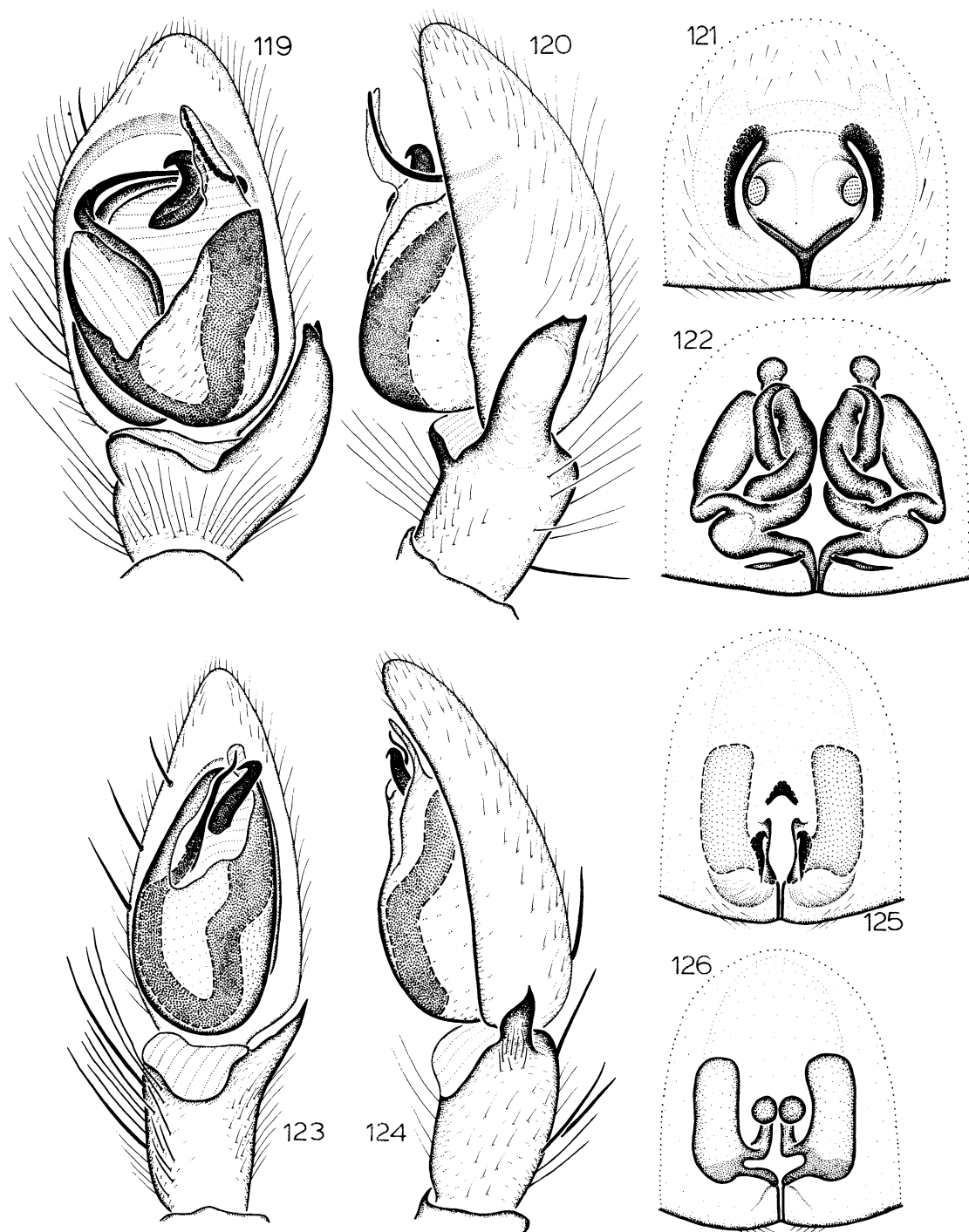
Diagnosis. *Scotophaeus* may be distinguished from *Herpyllus* by the presence of a hooklike median apophysis on the male palp (figs. 119, 123, 129) and elaborate spermathecae bearing terminal bulbs (figs. 122, 126).

Description. As in *Herpyllus* except for the following: total length 5-11. Carapace with long, erect, dark setae. Cephalic area not elevated. From above, posterior eye row slightly procurved. Endites long, narrowed at middle, raised laterally; labium notched at base; sternum with short sclerotized extensions to and between coxae. Typical leg spination pattern: femora I, II d1-1-0; tibiae: III p1-1-1; IV d0-0-0; metatarsi: I v0-0-0; III v2-2-2. Palp without broadened embolar base, with hooklike median apophysis. Epigynum with inner and outer lateral margins. Spermathecae complex, often coiled, with terminal rounded expansions.

Misplaced Species. *Scotophaeus guatemalensis* F. O. P.-Cambridge belongs to an apparently undescribed genus found from Mexico south to



FIGS. 115-118. 115, 116. *Herpyllus fidelis* (O. P.-Cambridge). 117, 118. *H. giganteus*, new species. 115, 117. Epigynum, ventral view. 116, 118. Vulva, dorsal view.



FIGS. 119-122. *Scotophaeus quadripunctatus* (Linnaeus). 119. Palp, ventral view. 120. Palp, retrolateral view. 121. Epigynum, ventral view. 122. Vulva, dorsal view.

FIGS. 123-126. *Scotophaeus blackwalli* (Thorell). 123. Palp, ventral view. 124. Palp, retrolateral view. 125. Epigynum, ventral view. 126. Vulva, dorsal view.

Patagonia. Judging from their descriptions, neither *Scotophaeus correntinus* Mello-Leitão from Argentina nor *Scotophaeus quilpensis* Simon from Chile actually belong to the genus.

Scotophaeus quadripunctatus (Linnaeus)

Figures 119-122

Aranea quadripunctata Linnaeus, 1758, p. 622 (type from Europe, lost).

Scotophaeus quadripunctatus: Simon, 1893b, p. 371. Roewer, 1954, p. 434. Bonnet, 1958, p. 3970.

Illustrations of the genitalia of the type species of *Scotophaeus* are provided for purposes of comparison with *Herpyllus*. The specimens illustrated are from Sweden.

Scotophaeus blackwalli (Thorell)

Figures 123-129; Map 9

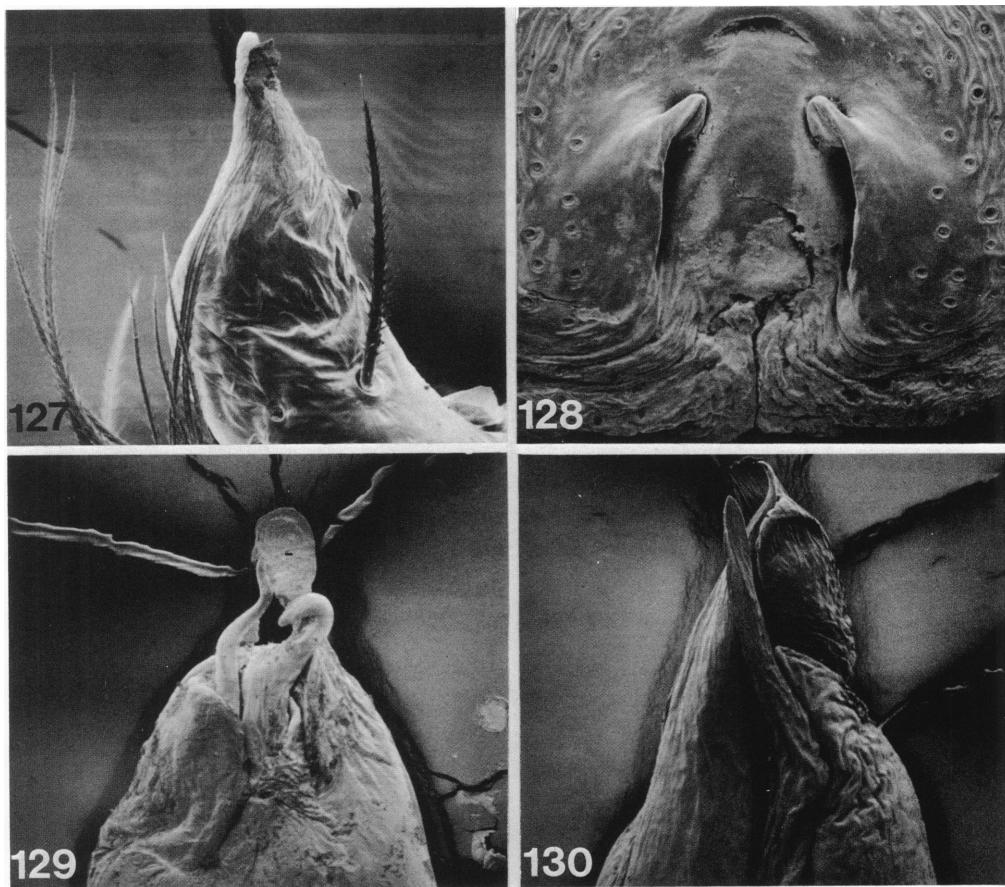
Drassus blackwalli Thorell, 1871, p. 179 (male holotype from England, lost).

Scotophaeus blackwalli: Simon, 1893b, p. 371. Roewer, 1954, p. 433. Bonnet, 1957, p. 3966.

Drassodes californicus Banks, 1904b, p. 330, pl. 38, fig. 8, pl. 39, fig. 28 (male syntypes from Sierra and Marin counties, California, in CAS, destroyed). Roewer, 1954, p. 397. Bonnet, 1956, p. 1562.

Herpyllus pius Chamberlin, 1919, p. 6, pl. 2, fig. 4 (female holotype from Claremont, Los Angeles County, California, in MCZ, examined). Roewer, 1954, p. 423. Bonnet, 1957, p. 2173.

Note. Only American synonyms are cited



FIGS. 127-130. 127-129. *Scotophaeus blackwalli* (Thorell). 127. Retrolateral tibial apophysis, lateral view, 475X. 128. Epigynum, ventral view, 195X. 129. Embolar region of palp, ventral view, 195X. 130. *Herpyllus propinquus* (Keyserling), embolar region of palp, ventral view, 195X.

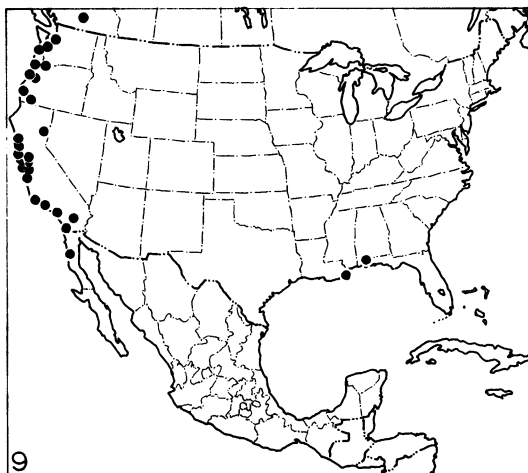
above; references to European literature can be found in the works of Roewer and Bonnet.

Diagnosis. *Scotophaeus blackwalli* seems closest to such European species as *S. scutulatus* L. Koch; the only American species likely to be confused with *S. blackwalli* is *Drassodes gosiutus*, but the latter species lacks a retrolateral tibial apophysis and terminal bulbs on the spermathecae, features characteristic of *S. blackwalli* (figs. 123, 126).

Male. Total length 7.44 ± 1.17 . Carapace 3.57 ± 0.58 long, 2.62 ± 0.40 wide. Femur II 2.37 ± 0.33 long (106 specimens examined). Eye sizes and interdistances: AME 0.14, ALE 0.15, PME 0.14, PLE 0.14; AME-AME 0.15, AME-ALE 0.05, PME-PME 0.14, PME-PLE 0.25, ALE-PLE 0.15. MOQ length 0.52, front width 0.42, back width 0.42. Embolar tip displaced laterally (figs. 123, 129). Retrolateral tibial apophysis short, triangular (figs. 124, 127). Leg spination: tibiae: I v2-2-2; II p1-0-1, v2-2-2; IV d1-0-1; metatarsus III p1-2-2.

Female. Total length 9.16 ± 0.85 . Carapace 4.45 ± 0.46 long, 3.28 ± 0.29 wide. Femur II 2.68 ± 0.25 long (99 specimens examined). Eye sizes and interdistances: AME 0.17, ALE 0.16, PME 0.14, PLE 0.16; AME-AME 0.17, AME-ALE 0.10, PME-PME 0.22, PME-PLE 0.37, ALE-PLE 0.25. MOQ length 0.63, front width 0.51, back width 0.50. Epigynum with short triangular hood (figs. 125, 128). Spermathecae each with two median projections (fig. 126). Leg spination: tibiae: I v0-0-0; II v0-1p-1p; III d0-0-0; metatarsus III p1-2-2.

Records. **Canada:** *British Columbia:* Salmon Arm. **United States** (county records only): *Alabama:* Baldwin. *California:* Alameda, Contra



MAP 9. North America, showing distribution of *Scotophaeus blackwalli* (Thorell).

Costa, Los Angeles, Marin, Mendocino, Monterey, Riverside, San Diego, San Francisco, San Mateo, Santa Barbara, Santa Clara, Sierra, Sonoma, Ventura. *Louisiana:* Orleans. *Oregon:* Benton, Coos, Jackson, Lincoln, Multnomah, Tillamook. *Washington:* King, Pacific, Thurston. **Mexico:** *Baja California Norte:* Santa María, 23 mi. S Colonia Guerrero. **Peru:** *Lima:* Lima; San Antonio Mala.

Distribution. Europe; Pacific coast of North America, Gulf coast of United States (map 9); Peru.

Natural History. Mature males and females have been taken year-round; specimens have been collected in and on houses, in shrubs and chaparral, and under bark of pear and cherry trees.

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